MAR 15 1920

Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly.

THE

MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association

VOL. I.—7TH YEAR—No. 3. SYDNEY: SATURDAY, JANUARY 17, 1920. PRICE 6D.

RAW CATGUT
DE-FATTED

We have just landed good supplies of the best quality Catgut of **English** manufacture in the following sizes:

Nos. 000, 00, 0, 1, 2, 3, 4, 5, 6

In Packets containing 12 strands each 10ft. long.

ALLEN & HANBURYS Ltd.
SURGICAL INSTRUMENT DEPARTMENT
B.M.A. BUILDING : ELIZABETH STREET, SYDNEY

First Class Award for Liquors and Liquid Extracts and Pharmaceutical Preparations, International Medical Exhibition, London, 1881.
First Class Award at World's Industrial Exposition, New Orleans, 1885. Bronze Medal, St. Louis, 1904.

Battley's Concentrated Medicinal Liquors

The following preparations have for many years been used and prescribed by medical men; they are therefore thoroughly recommended both on account of their high therapeutical properties and their great purity as galenical preparations.

Liq. Cinchonæ Cord.
(Battley)

Dose: 2 to 15 minims.

The most reliable preparation of Cinchona Bark. Contains all the active principles of Yellow Bark. Will remain unaltered for a great length of time, being free from starch, etc.

Liq. Opii Sedativus
(Battley)

Dose: 5 to 15 minims.

The Oldest and still the Best Hypnotic and Sedative.
Twice the strength of Tinctura Opii B.P.
Safe in use. No disagreeable after effects.
Composition always reliable.

Liq. Secalis Cornuti
(Battley)

Dose: 20 to 60 minims.

Pre-eminent among Ergotic Preparations for Purity and Strength, and has proved to be unrivalled in the following therapeutical actions: As an Emmenagogue and Ecbolic, in Post Partum Hæmorrhage, as a Hæmostatic, etc.

Liq. Cinch. Pallidæ
(Battley)

Dose: 2 to 15 minims.

A well-known and useful preparation in Malarial Diseases and in Convalescence after Illness.
Does not disturb the stomach.

Battley's Liquors are issued in 2 oz., 4 oz., 8 oz. and 1 lb. bottles.

NOTE.—We do not guarantee our preparations unless in original bottles with the autograph of Richard Battley over each cork and on the label, without which none is genuine.

Sole Manufacturers:

BATTLEY & WATTS, 18 Wellclose Square, London, E.

Telegraphic Address: "Sedative, London."

THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—7TH YEAR. SYDNEY: SATURDAY, JANUARY 17, 1920. No. 3.

THE APPLICATION OF MILITARY SURGERY TO CIVIL PRACTICE.[1]

By **C. Gordon Shaw, D.S.O., M.D., B.S. (Melb.), F.R.C.S. (Eng.),**

Assistant Surgeon, St. Vincent's Hospital, Melbourne.

The recent world war has made itself felt and has left its effects in every department of our national life and in every grade of society. Its effects have been profound and far reaching and its influence has been felt not only in the political and industrial world, but also in the realms of science and philosophy. Each nation is busy putting its house in order and many time-honoured conventions and traditional prejudices have been numbered amongst the killed in the war and society is now busy burying them. Reconstruction is the order of the day. It is inevitable that the principles and practice of surgery should be profoundly affected by the lessons taught and knowledge gained during the war. It is a duty we owe to the science of surgery and to posterity to see that the lessons are learnt correctly, that our acquired knowledge is built up on the sure foundation of scientific truth and that nothing is lost.

I must in the first place crave the indulgence of the meeting for attempting to deal with such a huge subject in one evening; I can only attempt to do so by omitting a very large part of it.

I propose to deal only with the principles of treatment of injuries of the extremities and of the chest. I shall leave out all reference to abdominal surgery, the surgery of the central and peripheral nervous systems, shock and orthopædics, not because advances in these branches have not been of the utmost interest and importance and of such a nature as to influence very greatly surgical treatment in the future, but because these are more specialized departments of surgical practice and because I must of necessity leave out a very great deal.

In dealing with accidental injuries received in civil life it must, of course, be remembered that these differ very greatly from war wounds. The case of a soldier wounded by a fragment of high explosive shell with an extensive lacerated and contused wound, whose tissues are devitalized and ingrained with Flander's mud, teeming with aerobic and anaerobic organisms, who has lost a good deal of blood and who after a painful and wearisome journey reaches a hospital where he can be treated many hours after the infliction of the wound, is very different from the case of injury usually seen in civil practice; but still I am sure much can be learnt from the former which will help in the treatment of the latter.

Flesh Wounds.

I propose firstly to deal with the principles of treatment of flesh wounds. It would be interesting and instructive to follow in some detail the evolution of wound treatment from the beginning when, influenced by experience in the Boer War, conservatism was the rule, to the final stages when, taught by bitter experience, surgical treatment was thorough and radical; but time will not allow me to do so. I may say, however, that the progress in treatment was rapid and laid on sure foundations and was accomplished by the co-ordination of both surgeons and pathologists, whose strenuous and scientific work in all zones from the front line to the base was not only a noteworthy feature of the medical history of the war, but also suggests methods of working by which advances in surgery may be made in the future. This is, no doubt, accountable in part at least for the impetus which pathology and scientific medicine and surgery has received both in England and here. I will state only the principles of treatment as they have been established by war surgery and, though these principles find their application much more frequently in war wounds which penetrate deeply and which lacterate, contuse and destroy the tissues, than in injuries seen in civil practice, which are more frequently superficial and incised, still I think their enunciation will be of value.

Firstly the wound should be thoroughly opened up, so that every part of it is exposed and all the devitalized and damaged tissue is excised. It is often possible to do this, *viz.*, to excise the margins of the entrance wound and the whole of the surface in one piece, so that the clean and healthy tissues underneath are not infected from the dirty surface. Injured muscles should be excised till the cut surface bleeds. All blood clot should be wiped out and foreign bodies removed. Complete excision in the majority of wounds is comparatively easy, but it is often difficult, or even impossible, not only on account of the presence of important structures, such as vessels and nerves which would be destroyed thereby, but also on account of the depth and extent of the injury.

Measures are next taken to sterilize the wound. To this end many different procedures have been employed. I would just mention in order to condemn it the use of strong antiseptic lotions, such as strong carbolic acid; treating the tissues with such substances causes sloughing and so forms a nidus for the growth of bacteria.

The pioneer work in this connexion was done by Carrel and Dakin. They showed that even after excision, a wound was not sterile and further that the usual applications of antiseptic lotions once or twice a day were not effective in keeping the wound surface antiseptic, as they became neutralized within a very short time and were of no use after about an hour. They perfected the system which bears their name by which the antiseptic lotion is instilled into the wound every hour or two hours. The details of this method are familiar to every one and I shall not go into them now.

A bacteriological examination of the wounds showed that day by day they became cleaner and at

[1] Read at a Meeting of the Victorian Branch of the British Medical Association on November 12, 1919.

last, when they were practically sterile, they were sutured. The Carrel-Dakin method then indicates the course we should pursue. It requires a skilled staff and is, I think, unnecessarily laborious, but it did a great deal to put wound treatment on a scientific basis. Several procedures have been established as efficient in rendering the wound sterile or practically so in a few days. Of these I would mention the treatment with flavine, the salt pack of Sir Almroth Wright and the treatment with spirit and "B.I.P.P." as introduced by Rutherford Morison. Personally I prefer the treatment with the bismuth-iodoform-paraffin paste, as it is simple, requires no further attention till the wound is to be sutured several days later and is, I think, at least as effective as other methods.

The question arises as to whether the wound should be sutured at the time, or left open and secondary suture performed several days later. The French surgeons said that wounds could be primarily sutured with success, provided that they were not infected with a hæmolytic streptococcus, but the experience of English surgeons did not bear this out. My own experience is that primary suture of war wounds in a large majority of cases was unsuccessful, but that they could be sutured with good results from 3 to 6 days later, provided they had been in the first place thoroughly excised within about 8 hours after the infliction of the wound.

Of course I recognize the fact that wounds are sutured primarily every day in civil practice without untoward results, but many failures do occur and I am confident that this method of secondary suture 3 to 6 days after the injury, the wound having been excised and left wide open in the meantime, is of great value.

Whether primary or secondary suture is to be performed must be considered in each individual case. The factors to be taken into consideration are the following, *viz.*:—

(1) *The length of time since the receipt of the injury.*—By the end of 8 hours organisms have multiplied and have begun to establish themselves in the wound and to spread to surrounding tissues. The likelihood of primary suture being successful diminished as the time elapsing from the infliction of the injury increases.

(2) *The nature of the injury.*—Contusion with devitalization of the tissues predisposes to the developement of sepsis.

(3) *The situation of the wound.*—Tissues which possess a good blood supply, such as the face and scalp, are much less likely to be complicated by sepsis than tissues which have not so good a blood supply, as, for example, the extremities. Wounds involving tendons, as, for example, wounds about the wrist and hand, are very likely to become septic and infection in such wounds is particularly disabling. All such wounds should be left open, if there is the slightest doubt as to their sterility.

(4) *The obvious cleanliness of the wound.*—If dirt is carried into the wound, it must of necessity be infected and in many injuries obvious dirt is ground into the tissues.

(5) *Whether the patient has lost much blood is of importance.*—An exsanguinated patient is more susceptible to septic infection than one who has lost only a little blood.

Septic Wounds.

Much new knowledge has been gained concerning the bacteriology of wounds and the nature of the infecting organisms; especially is this true with respect to infection with the tetanus bacillus and with gas-producing organisms. I shall, however, not go deeply into this subject, as infections of this nature are not common in civil practice in this country.

Let me say, however, that both diseases can be controlled absolutely, if treatment is instituted early. Nothing is more striking in the surgical history of the war than the way in which tetanus was practically wiped out. This was brought about mainly by the prophylactic injection of anti-tetanus serum within a few hours of the infliction of the wound and again at weekly intervals; and also by the radical surgical methods of treating wounds which came into common practice. The results have been wonderful and tetanus can now be classed among the preventible diseases.

I believe that if the war had lasted a few months longer, equal success would have followed our efforts to prevent gas gangrene. A serum had been produced just before the armistice which in the laboratory had proved thoroughly effective and it was anticipated that this polyvalent, anti-gas-gangrene serum would be injected as routine into every wounded man, just as in the case of anti-tetanus serum; or in fact, that the two could be mixed together in appropriate proportions, so that one injection could be made in order to combat both diseases. However, a great deal had been done by purely surgical means to prevent the progress of this frightful disease. The surgical treatment of the established disease as evolved by the end of the war consisted in opening up the wound to its depths and in its whole extent and thoroughly excising all the infected muscle. It was found that the infection tended to limit itself to part of a muscle, a whole muscle or a group of muscles in such a way that excision of the muscle involved meant excision of the disease. This is the treatment, the excision in one mass of the whole of the involved muscle, the wound is then left open and treated by any of the recognized methods. I always washed out the wound thoroughly with hydrogen peroxide solution.

If the infection has progressed far and the condition of the patient is very bad, amputation is the only operation to be considered.

A great many important observations have been made and much illuminating work has been done on the nature of the infection with these two organisms, *viz.*, the tetanus bacillus and the gas-producing organism. Comparatively early in the war it was observed that these organisms could exist in wounds as harmless saprophytes, causing no symptoms and giving rise to no trouble; and, further, that even after healing of the wound these germs can remain quiescent in the scar tissue for weeks or even months and that they may flare up and give rise to their characteristic symptoms as a result of surgical interference or injury to the wound.

I shall refer to this question of latent sepsis shortly.

The other fact, *viz.*, that these bacteria can be present in a recent wound as harmless saprophytes is one of great interest and importance. The question is what factors determine the actual and active infection of the tissues by means of the tetanus bacillus and the organisms of gas gangrene, in short, what factors determine the developement of these diseases. It was found experimentally that injection of a pure culture into a susceptible animal was followed by no effect, but if certain substances were injected along with the bacteria, the disease developed. The substances which were most potent in activating these germs were, firstly, the toxins of the streptococcus and, secondly, calcium. Other substances, such as the rare earths which are present in soil, also acted in this way to a minor degree. This fact, which is of great academic interest, is also of marked surgical importance, as it suggests a line of treatment to be followed in wounds infected with soil in which these organisms may be, *viz.*, the prevention of a secondary infection with the streptococcus by maintaining a strict aseptic technique, secondly by washing out the wound thoroughly, so as to remove all calcium salts and thirdly by the administration of anti-streptococcus serum.

Unfortunately, these discoveries were made late in the war, in fact, just before the signing of the armistice and so the practical application of them could not be put to the test.

Latent Sepsis.

I come now to consider the question of latent sepsis. It was recognized early that operations performed on recently-healed septic wounds were followed very often by a recrudescence of the sepsis. In the later periods of the war it became the established custom of surgeons to delay operation on such wounds for several months and even then the operative interference was sometimes effectual in lighting up the latent infection to the detriment of the patient and the chagrin of the surgeon.

I might mention here that while working at the Military Hospital at Harefield during 1918 I was faced with this difficulty. On the one hand to delay operations for months meant much waste of time and in many cases progress of the disability from which the soldier was suffering and which the operation was designed to remedy. On the other hand, operation on a recently-healed wound too often failed completely by reason of sepsis recurring in it.

Lieutenant-Colonel Dennis was at Harefield at the time and he suggested that before operation on old wounds, he should treat them by a course of ionization with salicylic ions for from 3 to 7 days. This procedure was adopted with very gratifying results. I am certain that by means of it the scar tissue in the wound was softened and the operation was greatly facilitated thereby and I believe that the scar was also sterilized. The length of time elapsing between healing of the wound and operation for, say, repair of nerves, was reduced to two weeks and I believe that I could operate on such cases just as confidently as I could if operation had been delayed for two months.

Considering the virulence of the infection in most war wounds, it is, perhaps, not surprising that organisms should be incarcerated in the dense scar tissue and remain there safe from the tissue fluids for an indefinite period, but what is surprising is the fact that they may remain latent in other parts of the body more or less remote from the wound. I have on several occasions broken down an elbow joint, which was stiff as a result of a compound fracture of the humerus, and this manipulation was sufficient to cause suppuration in the elbow joint. In these cases the wounds were well healed. It has been the experience of most military surgeons to see suppuration occur in the knee joint in cases of septic fractured femur. Broca mentioned a case in which he broke down a stiff ankle following immobilization of the leg for a compound fracture of the femur. These cases can to my mind be explained only by the hypothesis that organisms are absorbed from the septic wound by the blood stream and deposited in other parts of the body, where they may remain latent until caused to flare up by some injury or other. I think, too, that the same cause may be the reason of the stiff joints, which are such common sequelæ in wounds of the extremities. A limb immobilized in splints for simple fracture is not followed, as a rule, by any stiffness of joints that cannot be remedied in a short time by massage and active movement after the splints are removed; immobilization of a limb in the case of a child is followed by no stiffness at all. How is it, then, that in an arm which is immobilized for a compound septic fracture of the humerus, the wrist and fingers become stiff and in a leg which is treated for fracture of the thigh, the ankle and toes, as well as the knee, become more or less ankylosed and contractions are liable to supervene and these changes commence within a few days?

I would suggest that here we are dealing with a mild pyæmia, the organisms being absorbed from the septic wound and that this gives rise to a sub-infection of the tissues, whose vitality is depressed and whose blood supply is lowered by the fact that the limb is immobilized. This means that organisms are deposited in the muscles and in and about the joint and in these places produce an overgrowth of fibrous tissue with resulting limitation of movement and contractions. If this be correct, it is of great importance that all such cases should be massaged daily from an early date and that the muscles and joints at a distance from the wound should be exercised before any stiffness developes in them and, further, that the splints and apparatus employed be only as extensive as is necessary for the immobilization of the fracture and no more.

Wounds of Joints.

Important advances have been made in our knowledge of the correct method of procedure in wounds of joints. Before the war surgeons regarded synovial membranes as being most susceptible to infections and this belief they held and acted on for more than two years of active warfare.

It is a fact, however, well appreciated now, that synovial membranes do resist infection, that they are not so susceptible as periarticular structures, muscles and probably subcutaneous tissues and that they have, in common with other serous membranes, the power of combating infection to a certain extent.

An infection confined to a joint cavity is not nearly so serious a condition as one which has spread outside the joint. I have on many occasions seen suppuration in the vicinity of a joint and separated from the joint cavity by the synovial membrane only and the joint cavity remain free from infection. I have also seen cases of wounds which have penetrated a joint and in which the synovial membrane has been sutured, develope suppuration in the periarticular and subcutaneous structures, while the joint cavity remains free from infection.

The fact of the resistance to infection possessed by the synovial membrane has a very important influence on the treatment of wounds of the joints. In short, the treatment is thorough excision of all damaged tissues in the track of the wound right down to the bone and the cleansing of the joint, followed by suture of the synovial membrane without drainage. Whether the entrance wound should be sutured or not depends on circumstances and the factors considered already, but if there is the slightest doubt as to the safety of primary suture, I am sure the best procedure is to leave the entrance wound open and to perform a secondary suture four or five days later.

The treatment of joint injuries may be considered under the following headings:—

I.—Bullet Wounds and Punctured Wounds Without Injury to the Bone.

These may be left alone until, or unless, symptoms of infection supervene, in which case treatment should be instituted without delay. If there is a hæmarthrosis, the blood may with advantage be aspirated.

II.—Lacerated Wounds of Joints, Without Bone Injury.

Operation should be performed without delay. All the infected and devitalized tissue in the wound, including the torn edges of the synovial membrane, should be excised and the joint widely opened up, any foreign bodies which may be present, should be removed and the joint cavity thoroughly cleansed by washing out with a weak antiseptic lotion, such as flavine or simple saline solution. The synovial membrane is then sutured and no drain tube is left in. The entrance wound is sutured or not as the surgeon thinks fit. If it is sutured, I think it is safer to treat it first with spirit and bismuth-iodoform-paraffin paste. The limb is immobilized in a splint for a few days. If the wound be left open, secondary suture may be performed in 3 to 6 days, all being well, and movements of the joint instituted as soon as the reaction has subsided, which is generally in about a week or 10 days.

III.—Wounds of Joints Associated with Injury to the Bone.

The procedure in these cases depends first of all on the joint involved and whether strength and stability of the articulation is of primary importance, as in the knee, ankle and shoulder and mobility is of only secondary importance, or whether, as in the elbow and wrist, it is of more importance to obtain a movable joint than a particularly strong one. Our procedure is also governed by the extent of the bony injury and, lastly, in some degree it depends on the occupation of the patient.

In the case of the knee or ankle, it is of first importance to obtain a straight, strong limb, which will bear the weight of the body without pain. A deformed knee or ankle will be a perpetual handicap and a painful or weak joint is of little use to a patient, no matter how mobile it may be. In the case of a shoulder, if a freely movable and strong joint cannot be obtained, our aim should be to get bony ankylosis with the arm abducted and brought slightly forward. A flail shoulder joint is useless and a partially ankylosed one sooner or later comes into a position of adduction owing to the weight of the arm acting so as to bring the limb to the side of the body. A stiff shoulder cannot be acted on by the muscles controlling the joint and it is much better to sacrifice mobility of the shoulder to strength and to rely on the movements of the scapula to provide the limb with a very considerable range of movement.

In the case of the elbow and wrist, however, the relative importance of stability and mobility are reversed. An arm may be fairly strong and very useful, though it is deformed and even a small amount of movement in the joint is of great value, though it may be obtained at the sacrifice of a certain amount of the strength of the limb.

The extent of bony injury varies from the merest crack or tiniest penetration to one of the bones, up to practically complete destruction of all the bones entering into the articulation. In every case the bony injury should be fully exposed; our first aim should be to prevent the occurrence of sepsis by the complete removal of all dirt, foreign bodies and all infected and devitalized bone.

In cases of slight injury this may be efficiently performed by gouging out the damaged bone and, if the articular surface be uninjured, a good functional result may be anticipated. Even if the articular cartilage is injured, a certain amount of movement and sometimes a very considerable range may be obtained.

When the articular ends of all the bones entering into the joint are extensively damaged, the correct procedure is to perform an excision of the joint, with the object of obtaining an ankylosis in good position in the case of the knee, ankle and shoulder and, in the case of the elbow and wrist, with the object of obtaining a movable joint.

It is in the intermediate cases where there is localized destruction of a portion of an articular end of one or more bones that it is difficult to determine the best mode of procedure. Each case must be considered on its own merits.

A common injury of the knee joint is one which produces severe damage to one or other condyle of the femur, or one or other tuberosity of the tibia. If removal of the damaged bone involves removal of an extensive arrear of the weight-bearing surface at one or other side of the joint, the correct procedure, I think, is to perform a complete excision in order to get ankylosis in good position and so to avoid either a valgus or varus deformity, which would certainly develope sooner or later. If it is not a weight-bearing portion of the joint which is involved, such as the anterior part of the upper end of the tibia, or the front of the lower end of the femur or the patella, then only the damaged bone may be removed with

the chisel or saw and, if possible, the bare area so made should be covered by synovial membrane brought down from the subcrural bursa or in from the sides. By these measures a strong, straight limb is maintained; it is probable that a certain amount of mobility will be retained as well.

The principles which direct us in dealing with injuries of the ankle, are the same as those which govern treatment in the case of the knee.

When we come to consider the case of the elbow and wrist, however, the principles of treatment are different. Here our aim is to maintain a movable joint. Considerable controversy has taken place as to how this may best be performed. At one period in the evolution of the treatment of these cases a complete excision was advocated by many authorities, but I think the majority of surgeons now recommend that no more bone be removed than is necessary for the complete excision of all damaged and infected tissue. Acting on this principle in any particular case the whole or part of the lower end of the humerus may be removed, or the upper end of the ulna or radius, or merely the olecranon process. The joint is then closed, the wound in the periarticular structures and skin is sutured either at the time or several days later and movements are instituted to maintain mobility. If the result is not satisfactory, that is, if the range of movement is regarded as too limited, an excision of the joint can be performed at a subsequent date.

Injuries to the wrist are treated along similar lines. I would only mention here the necessity of keeping the wrist extended on the "cock-up" splint in all injuries to this joint.

There is a class of case not uncommon in military surgery and occasionally met with in civil practice in which the bones may be so extensively injured that excision of the damaged part would inevitably result in a flail joint. This was not a very uncommon result of excision of the elbow joint, or rather excision of the lower end of the humerus with more or less of the shaft. Treatment of these cases is difficult. If absolute asepsis of the wound can be guaranteed, which is impossible in war surgery, but which may often be attained in civil practice, I would suggest that each fragment of bone be cleaned separately, all the fragments replaced in position and an endeavour be made to obtain union by first intention. If this should occur and the bone fragments determine the reformation of the bone, it is possible that the result would be ankylosis of the joint. This, however, can be remedied at a later date by a surgical excision if thought desirable.

If it is impossible to eliminate sepsis without removal of so much bone that a flail joint must result, two methods of treatment are available, *viz.*, first, the use of an apparatus which is worn constantly to strengthen the joint and give it stability, or, secondly, a bone-grafting operation may be done with the object either of forming a false joint or of establishing ankylosis in good position.

Septic Joints.

It has not been my bad fortune to have had a very large experience of these cases. I would mention again the established truths that suppuration in joints can, as a rule, be prevented by early and thorough operation and by the removal of all damaged bone and foreign matter. If it should occur, however, experience in military surgery has taught us some methods by which it may be combated.

In the early stages aspiration, if necessary, repeated several times, may be sufficient. Aspiration may be combined with irrigation of the joint. The needle of an exploring syringe is inserted into the joint and all the fluid drawn off. The joint is then filled with saline solution, flavine or weak antiseptic solution, which is in its turn drawn off. This is repeated several times at each sitting. This procedure has prevented many an arthrotomy and I am sure it is of very great value.

I am not competent to speak with authority of the various methods of draining joints, as my experience of it has been a very small one, but at the best drainage is the beginning of a long, tedious course of treatment, which not unfrequently is terminated by amputation of the limb. This is especially true of the knee joint, in which suppuration occurs more frequently than in other joints.

I would mention two cases of suppuration in the knee joint treated with Rutherford-Morison's bismuth-iodoform-paraffin paste. Both patients had septic wounds of the upper third of the thigh. In both the knee joint became acutely inflammed; the temperature was 39.5° C.; a smear taken from the joint fluid showed long chain streptococci.

I performed an arthrotomy in each case and washed out the joint cavity, which was full of thin purulent fluid. I then rubbed the bismuth-iodoform-paraffin paste into all parts of the synovial surface and sutured up the wound completely in layers without drainage. In one case the symptoms subsided completely. The patient had no adverse symptoms whatever and three weeks later was transferred to a hospital ship for transport to Australia, with 60° movement in the joint. The other patient settled down in a week, his wound discharged a little for a few days, but subsequently healed. He also was sent to Australia and I saw him in the Caulfield Military Hospital on my return. His knee was soundly healed, but ankylosed. Of course one cannot generalize on two cases, but I think these results are very striking.

One other method of treatment I would mention is that introduced by Fullerton. His plan is to perform an excision of the joint and to keep the bones two, three or more centimetres apart, the wound being left open in such a way that the cavity can be thoroughly irrigated and drained. When the septic process has subsided, the bones are allowed to come together. In the cases I have seen treated by this method I think the course was better than in those treated by drainage of the joint, but in the subsequent history of these patients, after the wounds have healed and the patient is walking again, there is a good deal of pain. The method might be of value in certain cases after more conservative treatment has failed.

Surgery of the Chest.

The researches made in connexion with wounds of the thorax and lungs and the knowledge gained thereby will result, there is no doubt whatever, in very

great progress being made in the surgery of this cavity. It is now well recognized that the thorax may be opened and a pneumothorax produced with impunity, that putting one lung out of action temporarily during the course of an operation is a procedure not associated with any special danger and that collapse of one lung is not only harmless, but may be even necessary for the thorough exploration of the whole of the lung and pleural cavity.

Before the war it was regarded as a maxim of thoracic surgery that the lung should be kept in contact with the chest wall, that its collapse should be prevented, either by means of an apparatus for maintaining a positive pressure in the lungs, or by means of a special operating chamber in which a negative pressure was produced. Such methods of procedure were not only costly and inconvenient, but from the fact that they prevented collapse of the lungs it was difficult or impossible to carry out the intrathoracic operation successfully. But now the operation of thoracotomy has taken its place in surgery just as the operations of laparotomy and craniotomy have done and it is not associated with any more difficulty or risk than these operations.

Another important discovery in this connexion is the fact that the blood pressure does not fall on the production of a pneumothorax in the course of a thoracotomy properly performed; in fact, the fall which occurs in a laparotomy is probably greater than that which accompanies a thoracotomy.

The operation of thoracotomy may be performed by removing about 10 cm. of rib. The best access is obtained by removing portion of the fifth rib in the antero-lateral aspect of the chest; but, of course, the position selected depends on the site and nature of the lesion for which the operation is being performed.

The thorax is opened and a pneumothorax gradually produced. The ribs above and below the one resected are then retracted by a powerful, specially-designed, self-retaining retractor. The whole hand can now be introduced into the thorax and the cavity explored manually. Next the lung can be seized in forceps and delivered outside the chest, like coils of intestine in the case of a laparotomy, each lobe of the lung is delivered in turn. This is rendered possible by the fact that the lung is collapsed. If adhesions between the lung and the chest wall prevent the delivery of the lung, these adhesions must be either broken down with the finger or cut with scissors. Each surface of the lobe of the lung can be examined in turn. Finally, by means of a head light, the interior of the pleural cavity can be visually examined.

The lateral wall of the mediastinum and the pericardium may be thoroughly examined also. I would suggest that this trans-pleural route for operations on this region is quite possible and offers possibilities for the future development of the surgery of the chest.

If the lung is being operated on, the affected part should be delivered outside the chest and the remainder of the opening into the pleural cavity closed temporarily with packs, so as to minimize the passage of the air in and out of the thorax with consequent distress in the breathing. The opening should also be closed by packs should the breathing become distressed at any time during the course of the operation.

At the termination of the operation the thorax is closed carefully in layers; it is generally impossible to suture the pleura just opposite the cut ends of the rib, so the muscle should be closed in two layers and the skin edges accurately opposed without drainage. At the end of the operation I think it is a good thing to do away with the pneumothorax by aspirating the air from the pleural cavity by means of an ordinary aspirating needle. In this way the lung gradually expands and resumes its function. If this is not done the pneumothorax persists for some days.

By the end of the war it was, I think, established that similar considerations and principles should guide us in wounds of the chest as control our practice in wounds elsewhere. In short, in wounds of the chest and lung bleeding should be controlled by ligatures or suture if it does not stop spontaneously; effused blood and clot should be evacuated and devitalized tissue and foreign bodies should be removed whether it is the chest wall or the lung as well that is involved, with the object of minimizing the risk of sepsis.

Many chest wounds, such as through-and-through bullet wounds and penetrating wounds by very small fragments, may be left alone in the absence of such complications as hæmorrhage or infection of the pleural cavity or lung.

The conditions which call for surgical interference are: (*i.*) hæmothorax, (*ii.*) hæmorrhage, (*iii.*) open thorax, (*iv.*) presence of a foreign body of moderate size or of damaged infected tissue or effused blood, which will constitute a culture medium for bacterial growth.

(*i.*) *Hæmothorax.*—The desirability of evacuating every case of hæmothorax by means of aspiration with the object of removing the culture medium of anaerobes was recognized early, but it was feared that aspiration would be followed by recurrent hæmorrhage. This fear proved to be almost entirely groundless, as it was found that, provided the aspiration took place after an interval of some hours had elapsed and provided that the patient was kept at rest for some time after, hæmorrhage did not recur as a result of aspiration. It was also held to be desirable to remove the blood from the pleural cavity with the object of minimizing the adhesions which would form at a later date. Some surgeons even advocated the performance of a thoracotomy and the washing out of the pleural cavity, as aspiration is not a very efficient method of clearing out the whole mass of the blood. This is true, but still I think the correct method of treating a hæmothorax is by aspiration in the absence of some additional indications for thoracotomy.

(*ii.*) *Hæmorrhage.*—Hæmorrhage from one or other of the great vessels in the mediastinum usually proves fatal within a short time and treatment is not possible. Severe and persistent hæmorrhage may, however, take place from an intercostal vessel or from a vessel in the lung; if this is not treated it may prove fatal. The treatment is immediate operation with exposure of the bleeding part. A vessel in the chest wall or one on the torn surface of the lung can be picked up with forceps and ligatured. If the bleeding comes from deep in the lung, it is at times possible to open

up the wound and pick up the bleeding vessel, though generally it is sufficient to suture the entrance and exit wounds after dealing with the lung in the manner to be indicated shortly.

This is the surgical method of dealing with hæmorrhage from the lung and it has been useful in saving many lives.

(*iii.*) *Open Thorax.*—This is the term employed to indicate a condition in which there is an opening into the pleural cavity through which the air passes freely with the respiratory movements. The mortality of wounds of the chest with this condition is considerably greater than the mortality of chest wounds without an open pneumothorax. Death is liable to occur from two causes: firstly, from asphyxia as a result of the fact that one lung is put out of action and the other is considerably hampered in its function and, secondly, from septic complications, the infection gaining entrance to the pleural cavity from the outside. The indications for treatment are very definite; in the first place the wound must be thoroughly cleansed and excised; in the second the thorax must be closed. The opening should be temporarily closed by means of a large pad of gauze and rubber tissue; the operation should be performed as soon as possible. The operation consists in excision of the damaged and infected tissue from the chest wall and lung, the removal of foreign bodies and the cleaning out of the pleural cavity of blood, etc.. The wound in the lung is sutured and the chest is closed by carefully suturing the muscle in layers. The pneumothorax may then be aspirated.

(*iv.*) Treatment in the fourth class of cases, *viz.*, those in which there is a retained foreign body of fair size or a lacerated wound of the parietes and lung in which there is a certain amount of destruction of tissue and in which it is practically certain that organisms have been implanted and in which also there is probably a hæmothorax, is directed towards preventing those septic complications of the pleura and lung which are so common and which result in a large percentage of cases in death or the formation of a chronic empyema for an indefinite period.

In these cases the parietal wound should be excised and cleaned and fragments of fractured rib removed. The thorax is then widely opened, the injured lung is delivered, all damaged lung tissue is cut away, all foreign bodies, including fragments of bone, are removed and the wounded lung, after being cleaned with pieces of gauze, is sutured up carefully to prevent hæmorrhage and also infection of the pleura from the lung tissue. The pleura is then mopped out thoroughly and the thorax closed carefully in layers without drainage.

Infected Hæmothorax.

Infection of the hæmothorax was a very common event. In a series of 500 cases of hæmothorax published by Elliott and Henry nearly 40% became infected. The source of infection is firstly from the missile and clothing, secondly from the wound in the thoracic wall and thirdly from the lung itself. Should a hæmothorax occur in a wound of the chest a bacteriological examination of it should be made daily until all fear of infection is past. As mentioned above I consider aspiration advisable in these cases with the object of preventing infection and subsequent dense pleural adhesions. Should the hæmothorax become infected with any organism but the streptococcus and if the infection is discovered early while the organisms are still saprophytic and before the tissues have become invaded, a thoracotomy with mopping out of the pleural cavity may be performed, the thorax being closed without drainage. I must admit that the results obtained by me in these cases have not been encouraging, though many surgeons have spoken favourably of the procedure. It may be necessary to aspirate several times subsequently, but if the effusion becomes purulent the pleural cavity must be drained.

Compound Fractures.

The compound fractures as ordinarily seen in civil practice cannot be compared with the average gun-shot fracture, either with regard to the amount of comminution of the bone or the degree of infection, but I am sure in the future we will owe much to what has been learnt in the war concerning the treatment of compound fractures. The principles of treatment are the same in both classes of injuries and I venture to say our pre-war practice must be very considerably modified. It is of importance that these cases should be operated on with the least possible delay. As in all wounds the dirty and devitalized surfaces of skin and muscle should be thoroughly excised and all blood clot cleaned out. The wound should be completely opened up in its whole extent.

The next consideration is the treatment of the fractured bone. If there is no comminution the broken surfaces are merely cleaned by means of curetting with a sharp spoon and wiping away all blood clot and débris with gauze.

If there is comminution considerable judgement is required as to the best procedure to pursue. Speaking generally all completely detached or almost completely detached fragments should be removed; those with a fairly good attachment to periosteum may be cleaned and replaced in position. This procedure will probably be the one most often applicable. Two other methods have been used during the war and each of them may be applicable in certain cases.

The first method is that specially favoured by French surgeons and consists in removing all partially detached fragments of bone, *i.e.*, all the comminuted fragments, subperiosteally. This procedure leaves a gap of varying size in the length of the bone which is bridged by a sheath of periosteum. The advantages are that the wound can be much more thoroughly cleansed and the risk of sepsis is very much diminished. In practice it is found that the bone reforms and the gap is filled in. If care be exercised in the splinting of the limb, there is a minimum of shortening and the bone reforms in good position.

The second method of dealing with the bone is just the opposite to this. It consists in dealing with each comminuted fragment, carefully cleaning those which are attached *in situ* and, in the case of those which are detached, removing them from the wound, cleaning them with ether and replacing them in position after the whole wound is cleaned up. The employment of this method necessitates the absolute sterili-

zation of the wound. If the wound remains aseptic, the fragments will help to form a scaffolding for the formation and growth of new bone, but, on the other hand, and this is the great objection to it, the fragments predispose to infection in the wound and once this has occurred they keep up the infection till they are removed. The object of this plan of operating is to insure union without shortening the bone, but there is a great danger in it defeating its own end by causing septic infection in the wound, with not only resulting non-union, but also malposition of the fragments. In military surgery this method of operating was not successful, but it is probable that it will be useful in exceptional cases in civil surgery in which the injuries are not so grievously infected and in which the surgeon can spend as long as he likes cleaning each fragment of bone.

Having dealt with the fracture I am sure it is wisest and safest, as a general rule, to leave the wound open and to perform a secondary suture when it is sterile; that is, all being well, in from three to six days.

As regards the dressing for the wounds I myself preferred treating the whole wound with spirit and bismuth-iodoform-paraffin paste after the plan of Rutherford Morison. The paste was rubbed into every corner and recess of the wound. A dressing was applied and this, as a rule, used not to be touched until the secondary suture was to be performed. Of course, if it is seen that the wound has become septic, suture must be delayed until it is sterile.

The most striking feature about these cases is the great part that sepsis or the absence of sepsis plays. If infection is excluded the wound heals in a short time, the bone unites firmly and function of the limb is restored without any undue delay in practically all uncomplicated cases. In the presence of sepsis there is a great risk of non-union or mal-union occurring; the bones become the seat of a chronic osteomyelitis, generally of the rarefying type; the muscles and joints of the whole limb become stiff and atrophied and even when the wound has healed and the bone has united after many months' treatment and probably several operations, the fracture is painful and the use of the limb diminished to a very great extent.

A striking observation of these fractures was the rarity of acute spreading osteomyelitis. I have never seen a case, nor have I heard of one, which is really very surprising, considering the huge number of compound fractures which occurred and the severity of the infections. Investigation in compound fracture showed that the infection spreads in the bone only a very short way from the fracture.

There is no more important feature in the evolution of treatment of fractures during the war than the almost complete replacement of wooden splints by iron ones and the endeavours to standardize the splint. To my mind there is no question as to the superiority of iron splints for almost every type of fracture and I think it would be a definite advance if they were used more generally in civil practice. However, the question of splinting is far too large a one for me to discuss in a paper of this nature.

NOTE ON THE SIGNIFICANCE OF THE COMPLEMENT DEVIATION (WASSERMANN) TEST FOR SYPHILIS.

By **Frank Tidswell, M.B., Ch.M. (Syd.), D.P.H. (Camb.),**
Sydney.

From the questions put to me by medical confrères, it has appeared to me that to many men too busy to give critical attention to them, the voluminous reports and discussions on the above subject are more confusing than otherwise. The results of my experience with the tests are in accord, I think, with generally accepted opinions and it has occurred to me that a very brief statement of them may serve a useful purpose in view of coming events.

I submit, therefore, what I may call a finger and thumb notion of the value of the complement deviation test for syphilis; it may not be absolutely accurate, but it is a very good working guide.

The essential issues may be stated shortly as follow:

(1) In the earliest stages of chancre formation the test is apt to be negative. Later, when the chancre has developed and there is adenitis, it is more likely to be positive.
(2) In the secondary stages the test is generally positive.
(3) During the later stages the test is irregular, not only in different patients, but in the same patient at different times.

These issues are perhaps best understood by considering them in relation to the likelihood of the presence or absence of the deviating substance in the patient's serum; that is, by remembering one tests not for syphilis itself, but for the patient's response to absorbed "toxin." Thus, in the earliest stage, when little or no toxin is being absorbed, there is little or no response and the test is likely to be negative. Later, when the disease is more generalized, a response and a positive reaction are to be expected. Still later, when the progress of the disease is irregular, the test will be variable according to the precise condition of the patient when the blood is taken.

As a corollary to this reasoning the clinical significance of a positive reaction is for immediate and active treatment appropriate to the stage of disease. A negative reaction is not exclusive of syphilis and is of small diagnostic value. It becomes more significant in relation to treatment by which an original positive is rendered negative, but even then is indicative of cure only when the negative is maintained in a series of tests extending over a period of about two years. The usual recommendation is for three tests at least in 3, 9 and 24 months after the first positive.

Reviews.

GYNÆCOLOGY.

That a second edition Dr. Graves's large work[1] has been called for in such a short time speaks much for its excellence and popularity. The general plan remains unaltered, that is, in Part I. the author deals with the relationship of gynæcology to the general organism and to the internal secretions. This is a most valuable and interesting section and has been brought up-to-date.

[1] Gynecology, by William Graves, A.B., M.D., F.A.S.C.; Second Edition, thoroughly revised; 1918. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Crown 4to, pp. 883, with 490 original illustrations, 100 being in colours. Price, £2 2s.

Part II. is designed as a text-book for the student, giving a concise description of each disease, with its underlying pathological processes, and presenting many drawings from microscopic sections, with full descriptive legends appended beneath them, so that the student can master his histology and pathology with a minimum of effort. Surgical principles are elaborated and pressed home, but the technique of operations is reserved for Part III., in which the author presents gynæcological surgery and minute details of operative work in a clear style, helped by numerous excellent and informing plates and diagrams. While this section owes much to American and foreign authors, to whom Dr. Graves expresses his indebtedness, nevertheless, his own experience and judgement are disclosed in every page. In this section many drawings have been added or substituted for those previously used.

In Part I. the physiology of the genital system is very well done in a limited space. At the recent discussion in the Royal Society of Medicine in London on education in obstetrics and gynæcology, several speakers emphasized how much ignorance of the physiology of the genital system militated against successful practice. "Lactation causes a secondary atrophy, but not a permanent loss of muscle fibres (uterine)." This should impress the student with the value to the mother herself of nursing her offspring and thus preventing subinvolution. "It is thought the enlargement of the breasts of boys and girls at birth is due to the influence of the placenta, to which is also ascribed the growth of the maternal breasts during pregnancy." . . . "Occasionally alarming symptoms follow operations during mensturation." This occurrence would seem to be very rare. "The most common causes of menorrhagia at the menopause are cancer, polyp, fibroids." We would add fibrosis.

"The sexual impulse is increased just before and just after the menstrual flow." While physiologists hold this view as a general proposition, the increase before the menstrual flow is regarded to be exceptional.

"Cystic formation in the ovaries (from follicle atresia) is therefore physiologic." It is earnestly to be hoped that Australian surgeons who operate on and remove "cystic ovaries," will in future stay their hands. It is not too much to say that, in the present state of our knowledge, the removal of ovaries, except in the presence of *cancer uteri* or gross disease in these organs, is malpractice.

The 174 pages on the relation of gynæcology to the general organism, including the endocrinic system, is worth mastering by every practitioner, whether physician or surgeon. We know of no similar space containing so much information bearing upon every-day practice.

In Part II., on gynæcological disease, the author begins with inflammation, with gonorrhœa as the chief cause. The far-reaching effects of this deplorably common infection are duly emphasized. The author agrees with all other authorities in considering the presence of pus in Skenes's paraurethral ducts as pathognomonic of gonorrhœa. The ducts must be treated by injecting protargol (5% to 10%), by means of a hypodermic syringe and blunt needle, if the patient is to be rendered free from infection.

The author condemns the practice of curetting the uterus as a means of curing endocervicitis; the discharge is from the endocervix; curetting the uretus can have no other effect than to favour the spread of the infection to the tubes. Yet it is a common practice in Australia.

"Pyosalpinx occasionally becomes healed spontaneously, but, as a rule, it results in permanent damage to the pelvic organs and peritoneum." This is interesting, in view of a recent discussion on the subject (see *The Medical Journal of Australia*, September 20, 1919).

"Hydrosalpinx generally represents a mild and quickly aborted gonorrhœal infection, ... not a converted pyosalpinx." This we believe to be correct.

"Adhesions resulting from gonorrhœal salpingitis are of immense clinical importance; in the course of weeks, months or years they become exceedingly tough and unyielding." What an argument in favour of early operation! The author appears to favour delay, yet in the next chapter he sets forth graphically the deplorable results to mind and body of chronic pelvic inflammation and says: "The majority of these patients come sooner or later to operation."

Genital tuberculosis is placed second in importance to gonorrhœa as the cause of inflammations and much valuable information is given concerning it.

The author seems to confound *kraurosis vulvæ* with leucoplakia, ignoring the important differences between them, such as, while the former attacks the vestibule and meatus, the latter never does. Kraurosis is an atrophic process, leucoplakia an inflammatory one. Above all, leucoplakia is a pre-cancerous condition, while kraurosis shows no tendency to malignancy. Pruritus is the characteristic symptom in leucoplakia, while soreness, pain and contraction characterize kraurosis.

A study of the section on endocervicitis and endometritis will show what a small part the curette should play in the treatment of these conditions.

Under the heading "general inflammatory processes" is included the majority of diseases to which the female genito-urinary system is liable, including syphilis, tuberculosis, estheomene, cystitis, pyelitis, dual fistula and diverticulitis of the bowel, etc..

In the next section on new growths, the author, by ignoring the work of English surgeons, gives his readers an account of the important subject of operation for adeno-myoma of the recto-genital space, which Cuthbert Lockyer, of London, has shown to be incorrect. It is not necessary in these cases to remove the rectum in whole or part.

In suggesting curettage for hæmorrhage associated with small fibroids the author forgets to mention that this may easily injure the capsule of the tumour and thus lead to necrosis.

We agree that radium in the treatment of myomata has certain disadvantages, which greatly restrict its usefulness.

The treatment of cancer by radium is very fully dealt with and many practical points touched on. Radical operation after radium treatment is much more difficult and dangerous.

In regard to the Percy treatment by heat, the author says: "The most reliable evidence and our own experience is in its favour." The instruments are now obtainable in Australia. The treatment of errors of development is all that can be desired, both in illustrations and text.

In the ætiology of retroversion no mention is made of skeletal defects, which recent investigation show to be important. "Retroversion of the senile uterus is physiologic and not pathologic." This is an observation we have not seen in other books.

In treatment the Alexander-Adams operation is condemned, "because the percentage of recurrences is very high." Ventral suspension, because the suspending false ligament "becomes drawn out into filiform bands." Gilliam's operation "is efficient, but has objections," such as that it "causes a retroflexion of the body in some cases where the attachment of the round ligaments to the uterus is low." It "has been known to result in serious dystocia." The Webster-Baldy operation is praised, but "the results are not uniformly good." Olshausen's operation "is one of the simplest and most efficacious."

"Pessaries have only a limited field of usefulness."

In injuries due to childbirth the author does not mention that so-called reflex disturbances from a lacerated cervix are probably due to toxins from the infected cervix.

The section concerning special gynæcological diseases is excellent, especially that dealing with menstrual disorders.

The following quotation from the chapter on sterility should be taken to heart by enthusiasts for curettage as a universal panacea. "Cases have been reported of permanent atrophy of the uterus and amenorrhœa from an over-zealous curetting operation."

There is an informing chapter on pain. "The ovary is an insensitive organ." "It is a mistake to suppose that small cystic degeneration of the ovaries causes pain." "It is very doubtful if there is a true ovarian neuralgia."

Part III., on operative gynæcology, in both illustrations and text, earns high commendation. The author proves himself a deep student of the literature and a surgeon of great experience.

We cordially recommend the book to every practitioner, physician or surgeon.

THE NEW SOUTH WALES INSTITUTION FOR THE DEAF AND DUMB AND THE BLIND.

We have received a copy of the report of the New South Wales Institution for the Deaf and Dumb and the Blind for the year ending September 30, 1919. The year has been a very sad one for this excellent establishment. The school broke up on December 19, 1918, for the Christmas holidays. The commencement of the term was postponed from February 3, 1919, to March 10, on account of the prevalence of influenza. Three weeks later the epidemic had assumed such threatening proportions that the New South Wales Government sought accommodation for a large number of patients. An urgent request was made to the Directors of the Institution to place the whole establishment at the disposal of the Government for this purpose. This request was granted, as it was held that the risk of a serious outbreak in the school was great. The children were sent home and the Institution, together with the members of the staff, was placed at the disposal of the Department of Public Health. The loss to the children was incalculable. It meant that the deaf and dumb and the blind children, whose education is infinitely more difficult than that of hearing and seeing children, were deprived of the advantages of skilled training for the greater part of the year. The significance of this will be appreciated when it is pointed out that the average length of schooling of these children is but six years. The school was re-opened late in September. Only ten new pupils were admitted during the year, while twelve were withdrawn. Of these twelve, four were under the age of sixteen years. One of them had been at the school for 2½ years, another had been there for 3½ years and a third for five years. No teacher, however skilled, can educate a deaf mute or a blind child in so short a period as this. We trust that it will not again be necessary to close this institution on account of an infective condition. Many epidemiologists hold that it is bad policy to close schools on this account, because the possibility of exercising control over the pupils is lost and it is well known that children receive less supervision in the home than in a well-conducted school. We admit, however, that the case of these deaf and blind little ones is different to that of normal children.

A renewed plea is put forward to parents and others responsible for the care of deaf and blind children to send them to the Institution at a very early age, in order that advantage may be taken of the years when the brain is most easily influenced. A bill has been drafted providing for the compulsory education of the deaf and the blind and this bill, we understand, will be introduced by the Government at an early date. It is an essential measure.

It is reported that Alice Betteridge, the wonderful blind and deaf girl, is now 18 years of age. She competed for the Spittles's legacy prize and came within three points of the first position. The report this year is necessarily devoid of detail, on account of the interruption in the work. The value of the work of Mr. Harold Earlam and his staff is so well known not only in New South Wales, but actually throughout the whole world, that we can anticipate excellent results in the current year. It is one of the best conducted and most excellent institutions of its kind and is deserving of our support. The public should remove its only defect, namely, a debt of close on £2,800, without loss of time.

Naval and Military.

APPOINTMENTS.

The following announcements are published in the *Commonwealth of Australia Gazette*, No. 142, of December 31, 1919:—

Australian Military Forces.

APPOINTMENTS, PROMOTIONS, ETC.

First Military District.

Australian Army Medical Corps—

The undermentioned officers to be Majors, dated 1st November, 1919: Captain (Honorary Major) A. Y. Fullerton; Captain (Honorary Lieutenant-Colonel) T. G. Ross, D.S.O.; Captain A. G. Butler, D.S.O.; Captain (Brevet-Major) A. H. Marks, D.S.O.; Captain Honorary Lieutenant-Colonel A. M. McIntosh; Captain (Honorary Lieutenant-Colonel) F. C. Wooster, D.S.O..

Major A. Y. Fullerton to be transferred to the Australian Army Medical Corps, 2nd Military District, 1st November, 1919.

Retired List—

Honorary Captain G. Simpson to be granted the temporary rank and pay of Captain whilst employed as Officer Commanding Military Sanatorium, Stanthorpe, 22nd November, 1919.

Second Military District.

Australian Army Medical Corps—

Major (Honorary Lieutenant-Colonel) A. L. Dawson, D.S.O., to be transferred to the Unattached List, 1st October, 1919.

Major A. Y. Fullerton to be transferred from the Australian Army Medical Corps, 1st Military District, 1st November, 1919.

Colin Anderson, M.C., to be Captain, 1st November, 1919.

Third Military District.

Australian Army Medical Corps—

The resignation of Captains A. C. H. Salter and R. H. Ebsworth of their provisional appointments is accepted, 1st November, 1919.

Reserve of Officers—

Honorary Major J. T. Mitchell to be granted the temporary rank and pay of Lieutenant-Colonel whilst employed as Senior Surgeon at No. 16 Australian General Hospital, 13th November, 1919.

Australian Army Medical Corps Reserve—

Charles Cunningham to be Honorary Captain 3rd July, 1919.

The following is reproduced from the *Commonwealth of Australia Gazette*, No. 2, of January 8, 1920:—

Permanent Naval Forces of the Commonwealth (Sea-going).

To be Surgeon-Lieutenants—

Temporary Surgeon-Lieutenant John Herbert Blackburn, R.N., period of appointment, permanent service; date of appointment, 2nd September, 1919; seniority in rank, 26th April, 1918.

Temporary Surgeon-Lieutenant Davis Shields Prentice. M.B., R.N., period of appointment, permanent service; date of appointment, 27th September, 1919; seniority in rank, 1st July, 1918.

Mansell Franklin Emrys-Jones, period of appointment, five years; date of appointment, 7th November, 1919; seniority in rank, 1st August, 1918.

Ernest Gwyn Howell, period of appointment, two years; date of appointment, 14th December, 1919; seniority in rank, 14th September, 1919.

TERMINATION OF APPOINTMENT.

The temporary appointment of Surgeon-Lieutenant Sydney O'Neill, M.B., Ch.B., is terminated as on 1st December, 1919, on demobilization.

RESIGNATION.

The resignation of Gustave Alexander Melville-Anderson of his appointment as Surgeon-Lieutenant is accepted as on 9th June, 1919.

It is reported in the *British Medical Journal* of November 8, 1919, that Dr. Isaac Jones, a Melbourne graduate, Dr. Fred. Donald Herbert Blois Lawton, O.B.E., a Melbourne graduate, and Dr. George Charles Willcocks, O.B.E., M.C., a Sydney graduate, have passed the requisite examinations and were admitted members of the Royal College of Physicians of London. Relatively few Australian graduates have presented themselves for this examination.

The Medical Journal of Australia.

SATURDAY, JANUARY 17, 1920.

A Retrospect.

(III.)

Pathology.

There is little to report of discoveries or important extension of knowledge in the special chapter of pathology. A considerable amount of work of a valuable kind has been conducted on the macroscopical and histological appearances of organs and tissues in various disease conditions. Pure morbid anatomy and morbid histology belong more accurately to general medicine than to a special branch of science. Similarly the study of the altered chemistry of the organs and tissues associated with disease is rapidly being transferred to the bio-chemical laboratory, while the physical disturbances are being investigated more often in the physiological laboratory than elsewhere.

The year 1919 has witnessed the completion of the first world tour of the twentieth century by the virus of a disease called influenza by the Italians in the eighteenth century. Bacteriologists in every country have endeavoured to discover the nature of the virus and to elucidate the essential mechanism of the affection. A very large number of organisms has been isolated from the tissues, body fluids, exudates and secretions of persons affected with influenza. Early in the year of theory of Pfeiffer ascribing a pathogenic rôle to the influenza bacillus was largely discredited, chiefly because many observers failed to find this organism in a large number of cases. The frequency of the association of *Bacillus influenzæ* of Pfeiffer and the disease called influenza is said to have varied between 5% and 93% of the cases investigated. This extraordinary divergence of opinion or fact appears to be due to variations in technique and in the culture media employed. It has been claimed that this organism has been found in the throats of over 40% of normal persons and in association with other pathological conditions. Recent investigations, however, have revealed that it is present in the fauces and other parts of the body of persons suffering from the disease much more frequently than was demonstrated in the early researches. The frequent association of Pfeiffer's bacillus and influenza, however, does not prove it to be the causal organism of the disease.

From the records of experiments undertaken with the object of reproducing the disease in man, a significant fact has transpired that the greatest difficulty and uncertainty has attended these attempts. The infecting material used was filtered and unfiltered sputum, blood and pure cultures of the influenza bacillus and other organisms. It is generally recognized that the virus of the disease is still unknown and that even the method of transmission has not yet been ascertained.

Nicolle and Lebailly, in France, and Gibson, Bowman and Connor and Rose Bradford, Bashford and Wilson, in England, as well as several workers in America, have claimed the discovery of a filter-passing virus in connexion with influenza. Some of these bacteriologists, utilizing Noguchi's methods, have stated that the virus could be cultured anaerobically. The organism appeared to the discoverers as minute, rounded or oval bodies, ranging from 0.2 μ to 0.5 μ in diameter. Moreover, reports of successful inoculation into laboratory animals have been published. Rose Bradford maintained in May of the year that a filter-passing virus had been discovered and cultivated and that it satisfied Koch's postulates in regard not only to influenza, but also to polyneuritis, *encephalitis lethargica,* trench fever, nephritis and rabies. The astounding simplicity of the discovery stimulated scepticism among bacteriologists. In August J. A. Arkwright who had been working for 18 months on the virus of trench fever, published a criticism of the claims of Rose Bradford, Bashford and Wilson. He showed definitely that the supposed virus included common bacteria and granules of precipitated protein. Finally Wilson unreservedly admitted that it had not been proved that a filter-passing organism had been grown in pure culture in any of the diseases named.

The types of pneumococci found in the lungs of persons suffering from pneumonia or other pathological affection of the lungs following influenza, have been investigated by Lister in South Africa, by Pritchett and Stillmann and by Cecil and Vaughan in America and by Tebbutt in Sydney. These observers have shown that in the majority of cases the pulmonary

affection is associated with pneumococci of types III. and IV., the common inhabitants of the respiratory tract. The pathogenic types I. and II., so often the causal organisms of primary lobar pneumonia, are seldom implicated. Cecil and Vaughan have carried out extensive research on the value of vaccination against pneumonia. They vaccinated 13,460 men at Camp Wheeler, representing 80% of the entire camp population. The material used was a lipo-vaccine prepared from pneumococci of types I., II. and III.. The results, while not so striking as those obtained at Camp Upton, were undoubtedly encouraging. An outbreak of influenza occurred in the camp. The death rate from primary pneumonia was found to be 31.9% among the unvaccinated troops and 11.9% among the vaccinated. On the other hand, the death rate from pneumonia secondary to influenza was approximately the same among the vaccinated and the unvaccinated. It was noted that the majority of the fatal infections were due to pneumococci of type IV., the unclassified types that had not been included in the vaccine.

An important piece of work bearing on influenza and pneumonia is the investigation by Lundsgaard into the causation of cyanosis. He has shown that the primary cause is an increase in the oxygen unsaturation of the blood of the peripheral capillaries. The mean increase of the oxygen unsaturation is produced in two ways. There may be an abnormally great reduction of the oxyhæmoglobin during the passage of the blood through the capillaries or there may be a partial reduction of the arterial blood as it enters the capillaries. The first occurs in conditions such as uncompensated heart diseases, while the second is met with in certain pulmonary and cardiac affections. Cyanosis cannot be produced when the hæmoglobin is below 35%. Stadie, using similar methods, studied the cyanosis of pneumonia, more particularly pneumonia following influenza. He found a definite relationship between the degree of cyanosis and the percentage of the arterial oxygen unsaturation. In other words, he found that the smaller the amount of oxygen taken up by the blood, the greater was the degree of cyanosis. Although this conception is not new, the matter has not before been tested experimentally on a relatively large scale.

Many workers have contributed to the publications of the Medical Research Committee of the National Health Insurance in Great Britain on various subjects. The subject of dysentery has secured an important place in these researches. The relation of flies to bacillary infection has been investigated. Precise experimental and epidemiological observations have tended to strengthen the opinion that the fly is an important vector. The danger of carriers of Shiga's and Flexner's bacilli has been recognized. It is suggested that the discovery of mucus in the stools of persons known to have had dysentery, should be regarded as an indication for a bacteriological examination of the stools. It has been found that Flexner's bacillus appears intermittently in the stools of carriers. This fact is of considerable importance in the search for sources of infection. In regard to the carriers of the cysts of *Amœba histolytica*, it has been demonstrated that, notwithstanding the infrequency of frank infections in England, a relatively high percentage of soldiers and civilians in Great Britain harbour the cysts in their intestines. No satisfactory explanation for this apparent anomaly has yet been offered.

Further work has been carried out on the bacteriology of the pseudo-dysentery bacilli. Andrewes has classified them in three definite groups. He has given them the provisional names of *Bacillus ambiguus*, *Bacillus alkalescens* and *Bacillus dispar*. *Bacillus ambiguus* is held to be identical with the bacillus of Schmitz. It is doubtful whether this bacillus can produce dysenteric symptoms. The value of Michaelis's acid agglutination test for the differentiation of the dysentery bacilli is still in dispute.

Hamilton Fairley has elaborated a complement deviation test for bilharziosis. The antigen is prepared from the livers of infected *Bullinus* and *Planorbis*. He found that the fixation of complement was specific both for *Bilharzia hæmatobia* and for *Bilharzia mansoni*. The serum of persons infected with these flukes, acting with the antigen, has the power of deviating considerable amounts of complement. Hamilton Fairley has employed this test as a control of treatment. It promises to be as satisfactory for this purpose as is the Wassermann test for the control of the treatment of syphilis by salvarsan.

Noguchi has conducted some interesting work on the causal organism of yellow fever. His results re-

quire confirmation by independent workers. He has found a spirochæte in the blood of some persons suffering from yellow fever. He has also claimed that the intra-peritoneal injection of the blood of yellow fever patients into guinea-pigs produced in a few instances a morbid picture similar to that of yellow fever. The blood of the guinea-pigs contained the characteristic spirochæte. He has been able to cultivate the spirochæte artificially. The cultures proved to be virulent to susceptible animals. It remains to be seen if other observers can obtain similar results and if further evidence is obtainable in support of the claim that the spirochæte is the infecting agent in yellow fever.

At least 25 cases of malaria of indigenous origin have been reported during the year 1919 in England. A large proportion of the patients were children. Quite recently a similar case has been reported in Sydney. The medical profession in Australia will be required to search for malaria and other diseases which have affected Australian troops on active service, not only among returned men, but also among persons who have not left the country.

David Thomson has shown that gonococci are soluble in weak solutions of alkalis. When these solutions are acidified, a precipitate occurs. Thomson calls this precipitate the stroma of the organism. It is said to be a good antigen and is almost devoid of toxic properties. The acid-soluble fraction he calls the toxin. Thomson's toxin is endowed with antigenic properties, but to a smaller extent than the stroma. It is distinctly toxic. His detoxicated vaccine is a suspension of the stroma. He claims that very large doses, even amounting to 10,000 million gonococci, can be given without the production of a severe reaction. Thomson and Lees have obtained promising results with this detoxicated vaccine in the treatment of gonorrhœa and its complications. They have controlled their work by means of a complement deviation test. In this connexion Thomson has made a very important observation, which, if confirmed, may be of practical significance. He has found that, as a rule, Gram-negative organisms are soluble in weak alkalis, while Gram-positive organisms require strong alkalis for their solution.

Therapeutics.

The past year has not witnessed the publication of the results of any pharmacological investigation which has attracted widespread attention on account of the original nature of the discovery, nor has it been distinguished by the introduction of a new line of treatment of high value. F. L. Pyman has continued his examination of the active principles of the bark of the root of the ipecacuanha. A number of synthetic derivatives of psychotrine, cethæline and emetine has been prepared by various methods. A pharmacological study of these compounds has been made by C. N. Wenyon, H.H. Dale, C. C. Dobell and G. C. Low with the object of obtaining preparations which would exert a greater toxicity on amœbæ than emetine and which would be less toxic to human tissues. These compounds will be used in the treatment of those cases of amœbic dysentery in which the amœbæ have become resistant to the action of emetine.

A number of papers has been published during the year on the use of salts of antimony in connexion with various protozoal infections. Antimony has also been used for the treatment of bilharzial infection. Tartar emetic is given by intravenous injections on alternate days in doses of 0.12 grm.. The maximum amount administered during a course of treatment has varied from 1.5 grm. to 2.0 grm.. Blood begins to disappear from the urine about four days after the commencement of the treatment; at the end of a fortnight the urine is clear and contains neither blood nor albumin. Few ova can be found in the urine and these appear to be sterile and incapable of developement.

A series of studies has been made by different groups of workers upon the effects of the inhalation of irritant gasses. H. G. Barbour, together with various collaborators, has made some observations on the action of chlorine on dogs. The immediate effects upon the temperature and other functions have been noted. In addition, the secondary fibrotic changes which are induced in the lung, have been studied. Mustard gas has been made the subject of study by several teams of investigators. Lynch, Smith and Marshall have shown that di-chlorethyl sulphide has a systemic action in addition to its local action upon the respiratory tract, the eyes and the skin. They point out that di-chlorethyl sulphide undergoes hydrolysis in the presence of water yielding hydrochloric acid and di-hydroxy-ethyl sulphide. The latter is an inert body. Evidence is brought

forward in favour of the hypothesis that poisoning is due to the intracellular liberation of hydrochloric acid.

A comprehensive inquiry into the germicidal action of oils of eucalyptus has been completed by R. Greig-Smith, Linnean Macleay Bacteriologist, who has determined the relative values of the antiseptic effects of some of the principal constituents of these oils, such as cineol, aromadendral, phellandrene, piperitone, pinene and sesquiterpene. Cineol is more powerful as a disinfectant than phenol, its coefficient reaching a maximum of 3.4 in 30 minutes. It is, however, slower in its action, but overtakes the more quickly active phenol at the end of five minutes, with a dilution in each case of 1 to 75 of water. Piperitone is slightly more effective than cineol. Phellandrene is more active again, but aromadendral has a very high germicidal activity, being about 20 times as efficient as phenol in exposures of 1 hour. When these oils are diluted with water, they become opalescent. After some time the oil dissolves in the water and the solution becomes transparent. It is well known, however, that emulsions are more potent in destroying germs than solutions. Consequently an emulsion of cineol is more effective as an antiseptic than the solution which is ultimately formed.

A large number of vaccines has been used in the treatment of patients suffering from influenza and its complications. Many report have been published relating to the successful use of different vaccines in these conditions. So far, little exact information is available as to the precise conditions under which vaccine of different kinds should be employed. There seems to be a growing opinion that the exact nature of the strains of the organisms contained in the vaccines is of little importance. A number of workers insist, however, on the importance of the specificity of the micro-organism in these vaccines.

Urology.

The year 1919 has been marked rather by steady progress in urology than by any great discovery or revolution in practice of manifest significance. Much useful work has been carried out at the seat of war. Soldiers of the French and the American armies with war wounds of the genito-urinary organs were diverted to centres specially equipped for and devoted to this form of work.

Considerable discussion has taken place concerning the treatment of urinary retention due to spinal injury. Some authorities have advocated immediate routine suprapubic cystotomy; others have favoured manual compression of the bladder; yet others have advocated regular catheterization; others, again, have preached and practised inactivity. The majority of the patients have been subjected to regular catheterization, but the results have not been encouraging. Those who advocated manual compression promised much, but so far no statistics of definite value have appeared.

A great deal of patient investigation has been devoted to the intra-vesical and trans-vesical application of radium in the treatment of malignant diseases of the bladder and prostate. The present position is that, while solid, infiltrating growths of the bladder are little, if at all, benefited, papillomatous tumours can readily be made to disappear by means of special intravesical applicators. The cure of these conditions, however, is much more easily accomplished by high frequency currents applied through the cystoscope.

The treatment of malignant tumours of the prostate by radium appears to be a little more hopeful. The results, nevertheless, must be regarded as disappointing.

The cystoscopic application of high frequency currents to villous papillomata of the bladder has become increasingly general. The practice is now firmly established. It can be stated that at least 90% of these cases are permanently curable, as compared with less than 40% when the usual surgical methods are employed. This method of treatment of these potentially malignant growths should be brought to the notice of every practitioner of medicine. It is inexcusable that its importance has not been insisted on in our medical schools and great public hospitals. As far as we are aware, it has been adopted at only one of the public hospitals in Australia. In this connexion it should be pointed out that Australia is standing behind other countries in not providing special urological clinics at every large public hospital. In the near future it will be held to be malpraxis, save in exceptional circumstances, to open the bladder in the treatment of villous papillomata.

The performance of the two-stage operation for the removal of the prostate continues to gain in popularity. Its most ardent advocates, however, recognize

that in a few peculiar cases, the first stage can be carried through without detriment by catheterization. This is especially the case in patients who are found to tolerate an indwelling catheter.

The pharmacological and physiological aspects of urology are being investigated. These researches promise to yield important information in the near future.

Radiology.

The advances registered in radiology during the year 1919 may be considered under two headings, *viz.*, apparatus and technique.

Under the former heading the first place should be given to the radiator Coolidge tube, which was described in this journal in the record of progress in radiology during 1918. This tube has been further improved. A simple device has been introduced to enlarge the focal spot. This has increased the efficiency of the tube. It is now possible to pass 30 milliampères of current through it for long periods. The tube rectifies its own current. It can be joined directly to the terminals of a high tension transformer without the interposition of a cumbersome rectifying apparatus. This fact has led to the invention of numerous types of transformers for connexion to the ordinary alternating current mains. Some of these transformers are adapted for use in general portable sets, while others are employed for dental sets. They are capable of delivering 10 milliampères at a 12.5 centimetre gap. They are constructed for all purposes, except for opaque meal work.

Once a table of exposures has been compiled, setting forth the amount of current passing through the Coolidge tube, with the rheostat stop set on the transformer and the back-up spark, skiagrams can be taken and repeated with uninterrupted success. It is disappointing to note that the English makers have not kept pace with the American in the development of the interrupterless types of machines. In America the makers recognize the great value of research work and considerable sums are being expended annually on investigations by the large firms.

In connexion with technique it is interesting to note that two methods of examination have been introduced. Both are still in the experimental stage. The first is the injection of the cerebral ventricles with air or oxygen. In the skiagram the ventricles are outlined and their size and shape are displayed. The presence of extraneous shadows can also be determined and an interpretation of their significance made.

The second is the injection of air or oxygen into the peritoneal cavity for the purpose of studying the size and shape of the several solid organs, such as the kidneys, liver and spleen. While the former method will probably not be of great value in practice, the latter may prove of much use.

Opaque meal examinations continue in popularity for the diagnosis of gastro-intestinal affections. On the other hand, but little progress has been made in the radioscopical diagnosis of gall stones.

Dental radiography has made rapid advances. It is now considered bad dental practice to carry out work on devitalized teeth without a previous Röntgentological examination. These examinations have proved of inestimable value in the detection of foci of absorption at the roots of teeth in cases of articular rheumatism. It is held that the cure of these septic foci invariably leads to the disappearance or amelioration of the symptoms.

There has been but small advance in the therapeutic application of X-rays. Deep therapeutic applications are given for fibroid disease of the uterus. Many cures have been reported by reliable authorities. The hæmorrhage which so often accompanies uterine fibromata, is checked after the first heavy dosage. An artificial menopause is produced by a few applications. The treatment is contra-indicated in young girls and young women and in cases complicated by purulent salpingitis and retroversion. It is the most advantageous treatment of fibromata and fibro-myomata in women at or near the menopause.

The treatment of exophthalmic goître by radiations is yielding excellent results. The nervous symptoms diminish after one or two full doses, with two millimetres of aluminium as a filter.

THE RATTAN INQUIRY.

We learn from the daily press that the Medical Council of Tasmania has written to the Premier, intimating that the Council proposes forthwith to institute an inquiry into the validity or otherwise of the diploma in virtue of which Victor Richard Rattan secured registration on May 22, 1907. It is further stated that the Medical Council has invited the Council of the Tasmanian Branch of the British Medical Association to submit any evidence dealing with the matter of inquiry that the Council of the Branch may have in its possession.

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

(17) Treatment of Dacryo-cystitis by Curettage and Rapid Dilatation.

John Green, jun., is an advocate of W. R. Thompson's method of treating dacryo-cystitis (*Amer. Journ. of Ophthalm.*, October, 1919). Thompson considers that lachrymal obstruction arises from solid foreign material being carried through the puncture and sac and lodged in a fold of mucous membrane in the bony duct. This operation is as follows: The canaliculus is freely slit, to permit the entrance of a large-size Buck's flexible ear curette. In the presence of pus in the sac, the walls are gently curetted; otherwise, the small size curette is passed into the duct as a probe. When the obstruction is reached, gentle pressure is made in connexion with an auger-like motion, until the curette finds its way into the nasal cavity. The next size of curette is used in the same manner, until a curette the size of the duct passes easily. The operation is completed by applying tincture of iodine lightly to the walls of the sac and duct. He uses as an anæsthetic morphine and cocaine. There is usually a sharp reaction and swelling of the mucosa, which may be sufficient to block the canal. To prevent this, the author adds to his procedure forcible dilatation. He operates thus: The puncture is dilated and the sac irrigated with 1 in 5,000 perchloride and injected with 5% cocaine and epinephrin. The lower canaliculus is then freely slit and the sac gently curetted. A moderate-sized probe (Theobald 5 or 6) is then introduced and passed into the nostril, to insure that the curette shall enter the lumen of the duct and to avoid the possibility of a false passage and also to permit the anæsthetic to come into contact with the mucous membrane. On withdrawing the probe, he injects a few drops of 10% cocaine, the patient bending his head forward to let the strong cocaine solution emerge from his nostril. The curettage is then carried out according to Thompson's technique. After this he introduces a series of Theobald's probes, beginning with a No. 11 and progressing to No. 15 or 16. Considerable pressure must be used and a crackling sound is sometimes heard, indicating slight fracture of the bony walls of the duct. No ill-effects, however, result. Iodine is then applied to the sac and duct and a No. 10 probe may be passed subsequently every three weeks. The author reports 16 cases and is pleased with the results.

(18) Tuberculosis of the Retina.

E. J. Jackson and W. C. Finnoff publish three cases of tuberculosis of the retina (*Amer. Journ. Ophthalm.*, October, 1919). Case I.: A male, 28, complained of photophobia, lachrymation and ocular pain. Examination revealed two small, infiltrated areas on the right cornea and in the right fundus were two small patches of grey exudate over the superior nasal vein and artery, near the disc. Two similar patches were seen on a branch of the superior temporal vein. A month later further patches were seen on the lower temporal vein and small hæmorrhages began to appear. Similar areas were then seen in the left fundus. He was given an injection of 0.0005 mgrm. of bovine tuberculin. More than a year later he had two large subhyaloid hæmorrhages in the right eye. Small doses of tuberculin were given (0.000003 mgrm.). Ultimately the sight of the right eye was almost lost, the condition of the fundus being that described by the term *retinitis proliferans*. The left eye was normal. Case II.: A male, 33, with myopic astigmatism and failing vision and tuberculosis of the testes. The left macula shows 20 or more greyish white spots radiating from the fovea; the retinal veins were dilated and tortuous; flame-shaped hæmorrhages were seen in the upper temporal retina. He received 0.1 mgrm. of old tuberculin with general reaction. The treatment consisted in giving 0.00001 mgrm. bacillus emulsion once a week, the dose being gradually increased. Nearly two years later the condition cleared up. Case III.: A male, 25, had several vitreous hæmorrhages. The vitreous of the right eye was clouded; no details were visible. In the left eye there was slight haziness of the vitreous, but the disc and vessels were normal. He was treated for tuberculosis by a physician, who found signs in the apices. A year or more later the condition was not materially changed. Commenting on the first case, the authors urge the necessity of small doses of tuberculin, both for diagnostic and therapeutic purposes. Tuberculin apparently had a beneficial action on the left eye in this case and possibly a detrimental effect on the right eye.

(19) Substitute for Enucleation.

After enumerating the well-known disadvantages of simple enucleation of the eye, T. J. Dimitry describes his own operation (*Amer. Journ. of Ophthalm.*, September, 1919). The conjunctiva is undermined and sclerotic is punctured and counter-punctured by a von Graefe knife 2 mm. behind the corneo-scleral junction. The upper semi-circle is then incised with the knife and the lower with scissors. The contents are eviscerated. The posterior pole of the sclerotic is punctured with a von Graefe knife and a circular incision made around the optic nerve entrance. The optic nerve is divided and the circle of sclerotic removed. The sclerotic may then be evaginated and cleaned, then replaced and the small triangular sections removed at both sides. A gold ball is then inserted and the sclerotic sutured over its anterior surface. The conjunctiva is sutured to the capsule of Tenon at the position of its attachment to the sclera and hence is not brought over the sutured anterior wound in the sclera. The triangular openings in front secure a more snug fit of the sclera over the ball; the posterior window permits of the severance of the optic nerve, encourages absorption of exudates, minimizes the risk of sympathetic involvement and obviates the extrusion of the gold ball. Simple enucleation, with few exceptions, should be discarded.

(20) Myopia in School Children.

From August, 1914, to July, 1917, Ernest Thomson examined 3,249 school children in the county of Lanark, Scotland, and publishes some very interesting figures and remarks thereon (*British Journ. Ophthalm.*, July, 1919). One surprising fact elicited is that the children of rural schools presented a higher percentage of myopia than those attending urban schools. Of the total number examined 612 had myopia or myopic astigmatism in one or both eyes, that is, 18.8% Of 2,655 urban children 468 or 17.6% were myopic, while of 594 rural children 144 or 24.2% were myopic. Certain districts were difficult to classify, being mixed agricultural, mining and industrial. Worked out on this basis the percentages were: urban 17.23, agricultural 20.52 and mixed 26.57. It has not been possible at present to work out problems of heredity, tuberculosis, syphilis or consanguity as ætiological factors. The investigation of the mean myopia did not seem to point to any striking difference in the urban and rural districts. The mean myopia is more often higher in the right eye. The total number of squint cases was 65, with 9 doubtful. Of these 29, or 3.67%, were divergent and 45, or 5.69%, convergent. This finding is also at variance with current notions. A preponderance of left eye squint was noted. The author appeals for further statistical investigation.

(21) Recurrent Retinal Hæmorrhages.

R. H. Buck reviews the argument in support of the assumption of a tubercular origin in recurrent retinal hæmorrhages and describes their clinical and pathological course (*Amer. Journ. Ophthalm.*, October, 1919). The process starts as a perivasculitis along the course of the veins, which microscopically show round, giant and epithelial cell infiltration. The infection may travel along the lymph stream in the nerve sheaths. Later, as the vessel walls become eroded, hæmorrhages occur into the vitreous or between the retina and the hyaloid. Organization of these clots produces *retinitis proliferans* and retinal detachment. Epistaxis is often a forerunner of the ocular hæmorrhage. A striking feature is the rapidity with which these hæmorrhages are absorbed. The diagnosis of tubercular infection rests almost entirely on the tuberculin reaction. Occasionally co-existent tubercular foci are discoverable. Injections of normal horse serum and of human serum have been tried with indefinite results. Tuberculin treatment is indicated and correct sweats, potassium iodide and sodium salicylate and locally atropine and dionin.

LARYNGOLOGY AND OTOLOGY.

(22) Hysterical Aphonia in Soldiers.

Aphonia is one of the commonest hysterical symptoms seen in soldiers. It may result from any condition which irritates or strains the larynx, such as exposure to irritant gases, or following inflammatory conditions, exhausting illnesses or emotional strain. It often follows wounds in the region of the larynx, without any damage to the vocal cords. In all these cases the patient is aphonic, because he is convinced in his mind that he cannot speak. Aphonia following "gassing" often requires rest of the inflamed cords for a time, but when persisting longer than three or four weeks it is regarded by Arthur F. Hurst and A. Wilson Gill (*Journ. of Laryng., Rhin., Otology,* June, 1919) as hysterical in nature and therefore speedily curable by psychotherapy, no matter what the laryngoscopic appearances may be. The soldier, as the result of the stress and strain of war, is especially liable to develope by auto-suggestion the idea that some real and permanent damage has been done to his voice. A diagnosis of some laryngeal affection, together with local manipulation and treatment, will help to confirm his suspicions. The authors stoutly affirm that pharyngeal anæsthesia is not a stigma of hysteria, as is commonly taught. The respiratory excursion is subnormal in all cases of aphonia (Reynell) and the voice is generally of a different character from that found in the aphonia from organic disease. In hysterical aphonia a flaccid or spastic paralysis of the laryngeal muscles may obtain. In the former the patient makes no attempt to phonate, in the latter he makes violent efforts, but the diagnosis is of no practical importance, both being curable by the same means. As no patient is allowed to remain uncured longer than twenty-four hours after admission, Hurst and Gill permit their patients to mix freely together in this atmosphere of cure and state that they react favourably on one another. Each patient on admission has his history taken and is then definitely promised a cure. He spends a short interval of waiting in the company of patients recently cured and then interviews the medical officer, preferably in a private room. He sits comfortably in a chair, while it is explained to him that his loss of voice is due to the fact that he has forgotten how to use it. He is told that he whispered after being gassed in order to save himself from pain, as his vocal cords were inflamed; as the inflammation and the pain have now long ago passed away, there is no further need to save his voice. He is then asked to cough, as it is comparatively rare that there is any alteration in the cough. His attention is immediately drawn to the natural cough and it is explained to him how the noise made in coughing is actually the same as in speaking, so that if a man can cough he can also say "one." He is told to cough again and say "one" immediately after, without any pause. He often succeeds at the first attempt and with very little additional encouragement he is soon able to talk in his natural voice. A little re-education may be then necessary to correct hoarseness or a falsetto voice, or to overcome stammering. This seldom takes longer than a few minutes. In rare cases tickling the throat with an intra-laryngeal probe or making the patient gargle is required to initiate the coughing. The performance of gentle manipulations with the fingers over the glottis during the explanation to, and persuasion and encouragement of, the patient, is often helpful. No after-treatment is required.

(23) Hyperplastic Ethmoiditis.

Hyperplastic ethmoiditis, a non-suppurative form, is regarded by J. L. Maybaum (*New York State Journ. of Medicine,* April, 1919) as resulting from continued irritation of the mucous membrane through interference with ventilation and drainage, caused generally by obstructive changes in and about the middle meatus. The earliest characteristic objective symptom is a thickened membrane on the outer wall of the middle turbinate and on the floor of the ethmoid capsule. With this is associated a profuse watery discharge from the nose, severe headache, usually supra-orbital, paroxysms of sneezing and so-called weakness of the eyes. The middle turbinate should be refracted in such cases. Later there is a local polypoid change in the anterior end of the lower border of the middle turbinate and small polypi appear in the middle meatus. Advanced cases may show the middle turbinate and all the ethmoid walls absorbed and masses of polypi wedged in this situation. Many such cases become secondarily infected and present the picture of suppurative ethmoiditis. In the earlier stages there may be some softening and degeneration of the osseous middle turbinate, and later the lateral mass of the ethmoid bone becomes involved, the bone becoming softened and partly absorbed by a rarefying osteitis. A cure may result in the early stages by removal of obstructions in the nose. In more advanced cases the diseased anterior ethmoidal cells may be curetted till only sound bone is felt and the middle turbinate left intact. If the polypi are large and few in number, a simple snaring may suffice, but their origin should invariably be examined by a probe. More extensive disease, which has destroyed the function of the parts, may call for complete exenteration of the lateral ethmoid body and the middle turbinate. The Mosher operation is effective in all types of cases, but a thorough knowledge of the anatomical relations and the pathological conditions present is essential. With the patient in the upright position, the internal nasal wall and turbinates having been thoroughly cocainized, the Mosher curette is entered through the prominence caused by the *agger nasi* cells and swept from without downwards, inwards and backwards, removing the anterior ethmoid cells and bulla. The cells about the fronto-nasal duct are also cleared away. Then the posterior ethmoid cells are broken down from the bulla backwards to the anterior wall of the sphenoid. Any remaining cells are removed by the Grünwald punch. The middle turbinate is left until the exenteration of the labyrinth has been completed and is then removed by severing its attachment to the nasal surface of the ethmoid capsule, by means of a scissor-punch. The remaining fragments of the ethmoid are removed by the punch or Luc's forceps. No packing is left in the nose, but loose sterile cotton-wool may be inserted in the nostrils and changed as often as required. After three days the nose is irrigated with a warm alkaline solution.

(24) B.I.P.P. in Mastoid Wounds.

The use of "B.I.P.P." (bismuth subnitrate 220 grm., iodoform 440 grm., and liquid paraffin 220 grm.) is effective in shortening the after-treatment in many cases of acute suppurative inflammation of the mastoid antrum and cells, says Herbert Tilley (*Journ. of Laryng., Rhin., Otology,* March, 1919). In his cases all diseased matter in the mastoid and antrum was removed, the "attic" and tympanic cavities irrigated with warm saline directed forward through the aditus and the bony wound thoroughly cleansed with swabs moistened with methylated spirit and dried. "B.I.P." paste of the consistency of cream was then smeared over the soft tissues and bone and the external wound sutured in its entirety. Pressure was applied to the wound to squeeze out any excess of blood and "B.I.P.P." A dry sterilized dressing was then firmly bandaged on. The stitches were removed on the fourth or fifth day and the line of incision painted with collodion. A light gauze dressing was applied over the ear for four or five days and not replaced. Patients were usually discharged from the hospital in from ten to fourteen days. The author has seen no inflammatory reaction of the soft parts when "B.I.P.P." was used and he has had no case of iodoform poisoning. Tilley claims to have had equal success in the use of the preparation in three consecutive cases of external operation for chronic suppuration of the frontal sinus.

(25) Labyrinthine Fluid.

That "in all probability there is no secretion of labyrinthine fluid in the inner ear and that the endo- and perilymph are probably not an independent secretion, but are derived from the cerebro-spinal fluid," is the conclusion reached by Otto Fleischmann from experiments in vital staining in various animals (*Arch. f. Ohren., Bd.,* cii., *Heft* 3-4, 1918). Trypan blue or isamin blue were the stains injected and pyrrol or wandering cells, which are found in organs with an internal secretion, but not in those with an external secretion (with the exception of the kidney) looked for. No trace of blue was found in the labyrinth, though pyrrol cells were encountered in the middle ear, the choroid plexus and even in the bony interspaces.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on November 12, 1919, Dr. J. Ramsay Webb, the President, in the chair.

Dr. Gordon Shaw read a paper on "The Application of Military Surgery to Civil Practice" (see page 49).

Dr. T. P. Dunhill said he was glad to voice his appreciation, not only of the paper, but of the great amount of surgical work done by Dr. Shaw at the war. This entitled Dr. Shaw to speak with knowledge and authority on the subjects of which he had spoken. There had been great advances in war surgery and these advances had taken place to a very great extent in the last year or two of the war. At first the amount of work was so great and the problems so overwhelming that each one had to tackle his difficulties in his own way and with the means at his disposal. Later, through the movements of surgeons as they were transferred from place to place, problems were discussed and results compared. Procedures became more standardized and yet with plenty of room for individual scope.

One of the great advantages that would accrue to civil surgery as the result of war experience, was the greater use of gas and oxygen anæsthesia in patients suffering from shock. This anæsthesia was not born of the war. It was used extensively in the United States in pre-war days and sporadically in other countries. However, it found wide application in war surgery, with gratifying and life-saving results. The type of case, with which he had had most experience of it, was that in which a soldier, perhaps after leaving the casualty clearing station with his wound apparently well in hand, would arrive at the base in profoundly toxic condition as the result of gas gangrene and exhausted as well by the long journey. These patients, as, for instance, those with leg injury necessitating thigh amputation, would be likely enough to die if ether were used; but if gas and oxygen were used as the anæsthetic, the operation could be safely done. The patient, instead of dying of shock, often asked for a cigarette immediately after and then demand something to eat. It required a little practice for its smooth administration, and for abdominal work it was a great advantage to assist it with local infiltration of the body wall. This should have a wide applicatoin in civil surgery.

Dr. Dunhill said that the management of fractures of the femur had been advanced. Thomas's splints used as in the Hodgen method gave a purchase and control over fragments which the Hodgen's method itself did not give. The Hodgen method of suspension applied through a Sinclair frame, with end extension counterpoised by body weight, made a combination of methods that gave great control over fragments in difficult cases. In certain cases of fracture of the femur close to the knee joint, with backward displacement of the lower fragment, extension applied through Besley's ice-tong callipers, would unfailingly rotate the lower fragment into alignment. The travelling X-ray outfit had proved an essential adjunct in these cases. He could not over-emphasize the importance of lateral skiagrams. The best stereoscopic antero-posterior photographs often failed to reveal backward displacements; for the detection and proper correction of these very bad deformities, lateral skiagrams were a necessity. Dr. Shaw had spoken of the removal of fragmented pieces of bone. He (Dr. Dunhill) recalled how the writings of Leriche and Ollier had been met at first with a certain amount of skepticism on the part of English surgeons. The war had provided the opportunity for a thorough trying out of the teachings of the authors named, in hospitals specially set aside for the purpose. He had seen that if in the right cases the proper, sharp, Ollier elevators were used, the results were good and quite large gaps would subsequently fill in.

Delayed primary suture was undoubtedly of immense value in crushed and lacterated wounds. If torn and dead tissue were removed and the cavity packed with gauze for 48 hours, the wound would, in many cases, be found to be pink and clean and ready for suture.

All surgeons who had had experience on active service, could bear out Dr. Shaw's remarks on knee joints. All sorts of things had been removed from the joint and in very many instances the recuperative powers of the synovial membrane were such that healing by first intention followed a careful closure of the joint.

A very important factor contributing towards surgical progress in war work was the segregation of types of cases. Some system of team work and segregation of the different groups of cases must be introduced into civil practice, if rapid advances were to be made. If many men in one centre were doing everything, no one would obtain a large experience of anything. In military surgery they were able to establish hospitals for "chests," hospitals for "heads," etc.. With keen men in charge, it was obvious that the probabilities of progress in each of the several divisions of surgery were much greater than if the cases in each hospital were a heterogeneous lot.

He had been very much interested in Dr. Shaw's paper and felt that they were all indebted to him for his review of the surgery of wounds and of the chest, as developed during the war.

Dr. C. E. Dennis remarked that as a radiographer he had been impressed with the good results following the procedure of removal of all loose pieces of bone in comminuted fractures. In the earlier days sequestra were very much more common than in the later period of the war, as were also suppurating sinuses. The very great diminution in the incidence of these sequelæ to comminuted fractures he attributed to the practice of removing the loose fragments. He had also noted that, when the pieces were left, the callus formation was invariably greater than when the scraps of bone were removed.

With reference to the ionization mentioned by Dr. Shaw, he did not know how much to attribute to the hyperæmia induced, or to what extent the salicyl ions exerted a sterilizing effect. The results were very often beneficial. With Dr. Shaw, he had tried ionization on some sloughing wounds, prior to secondary suture or skin grafting. He had experienced very good results.

Dr. Balcombe Quick expressed his regret that he had been unable to be present for the earlier part of Dr. Shaw's paper, but he had derived much pleasure from listening to Dr. Shaw's observations on joint wounds, the surgery of the chest and compound fractures. Dr. Quick said that he was disposed to attribute the delay in development to which Dr. Dunhill had referred, to the fact that for so long they were of too little faith and had been slow to realize the recuperative powers of the tissues when the incubus of damaged and infected portions had been removed. As regards joint wounds he was of opinion that the key-note lay in free access and that with free excision of damaged soft parts and careful cleansing of the bone the powers of recovery of the synovial membrane were such as they had not suspected before the war.

If he might mention an additional indication for operation in chest cases, it was that condition in which fragments of rib were inverted, impinging on the pleura and occasioning the patient agonizing pain with every breath he drew.

Gas and oxygen anæsthesia had given general satisfaction. It had this advantage in chest operations that at the close of the intrathoracic surgical procedures, the anæsthetist might be asked to increase the pressure in the bag and thereby inflate the lung to some extent. While it was not possible to do this completely, the pneumothorax could be very considerably diminished.

He agreed with Dr. Shaw that it was very difficult, if not impossible, to suture the pleura at the ends of the wound and a small triangular area of this layer nearly always remained unobliterated beside the cut rib ends. Failure to do so was of little moment and, provided that muscle and skin layers were carefully brought together, the resulting surgical emphysema was followed by no bad results.

He had followed the teaching of Leriche and Ollier in a small series of thigh fractures, at the base, with gratifying results.

Sharp elevators were essential to carry the superficial layers of bone with the periosteum, thus ensuring the removal of osteoblasts with the deeper vascular layer of this membrane. He believed that Leriche had found experimentally that within eight hours of an injury to, or infec-

tion of, a bone, an emigration of osteoblasts commenced from bone canaliculi to periosteum and that periosteum lifted from the bone after this period had elapsed, retained its osteogenetic powers. As few bone cases came under treatment at a casualty clearing station earlier than that, it had been deemed safe to carry out this strictly subperiosteal removal of fragments.

Dr. B. Milne Sutherland said that he wished to congratulate Dr. Shaw on the excellence and scope of his paper. Dr. Shaw's experience had embraced the slower and more tedious cases at the hospitals in England, as well as the acute surgical types in France. He agreed with the utility of nitrous oxide and oxygen anæsthesia in special cases, but it was too expensive and the apparatus too cumbersome for general use. A feature of their work on the other side, which also stood out, had been the facility characterizing the X-ray service. X-rays were always available and were freely used. Considerable limitations in this direction were experienced on return to civil practice and the inconvenience and expense attaching to X-ray examinations in ordinary practice were noticeable after their ready accessibility under active service conditions.

The conservatism in, and the expense of, the manufacture of modern splinting was also noticeable. In the early stages of the war free incision followed by Carrel's method, plugging and draining for months was the routine and resulted in large scars which would not heal or would ulcerate on the slightest provocation. Excision of these scars even with the greatest care and secondary suture would freuqently be followed by acute inflammation, resulting in a condition as bad as or worse than the original, as a result of the freeing of the germs encapsuled in the scar tissue. There was no question that ionization for a period prior to excision improved the results of secondary suture. Swabbing the wound with bismuth-iodoform-paraffin paste, with or without previous ionization, also gave very good results. These two methods enabled many men to be returned to service (active or home) more rapidly and reduced their disability and consequently their pensions.

The President, Dr. J. Ramsay Webb, tendered his thanks to Dr. Shaw for the valuable paper, which would serve to acquaint members who had not been privileged to go on active service, with some of the many interests which arose in the course of the war. He hoped someone with the necessary attainments and enthusiasm would trace the evolution of knowledge as the war progressed; he could imagine no more fascinating reading and looked forward to a work of this nature.

Dr. Gordon Shaw thanked the contributors to the discussion and the members generally for the reception accorded his paper. He said that owing to the lateness of the hour, he would forbear to make any remarks in reply.

A meeting of the South Australian Branch was held in the Lister Hall, Hindmarsh Square, Adelaide, on November 27, 1919, Dr. H. S. Newland, the President, in the chair.

Dr. H. S. Newland showed two cases of rhinoplasty and one of osteo-periosteal grafting of the frontal region.

Dr. R. E. Harrold showed a case of *xanthoma diabeticorum*. The notes of this case will be published in a subsequent issue of the *Journal*.

The following letter from Dr. H. H. E. Russell, late Principal Medical Officer of the 4th Military District, was read.

> Dear Sir,—As the time is not far distant when the military medical service in this district will resume its pre-war basis, the Principal Medical Officer is desirous of placing on record his appreciation of the valuable assistance afforded him by the British Medical Association, the Council of which, together with its members (both individually and collectively), has given at all times throughout the period of the war a most willing response to the varied and numerous calls made as a result of war conditions.
>
> South Australia, comparing its area and population with other States, occupies the creditable position of having provided the highest percentage of medical officers for active service, whilst, at the same time, successfully meeting the needs of its civil population; this is a record of which the medical profession in the State can be justly proud and its achievement is self-evident of the personal sacrifices made by many practitioners, in order that their services might be utilized to the best advantage.
>
> A brief résumé of the activities of the medical profession in this State, in so far as concerns the great war, shows that—
>
> (*a*) *Naval and Military.*
>
> | | |
> |---|---|
> | Joined the Royal Australian Navy .. .. | 5 doctors |
> | Joined the Australian Imperial Force .. | 139 doctors |
> | Joined the Naval and Military Expeditionary Force .. .. | 4 doctors |
> | Joined the Royal Army Medical Corps .. | 26 doctors |
> | Total .. .. | 174 doctors |
>
> Of the foregoing, the records at present show that 135 have returned; 5 are deceased and 34 are still to return.
>
> In addition to the numbers of medical officers who have actually seen active service, it should be remembered that all doctors in the State eligible for military employment have joined the Australian Army Medical Corps Reserve and thus placed themselves at the disposal of the Principal Medical Officer, 4th Military District, for employment as surgeons in camps of training, or as residents in military hospitals. The calls made on these officers for such services from time to time have invariably met with a ready response and with an alacrity which has been conducive of the best results in medical administration.
>
> Again, mention must be made of those medical officers who took appointments as resident medical officers at the Adelaide Hospital and also of the great work carried out by visiting medical officers (at that Hospital and at the Children's Hospital), who cheerfully undertook additional work in order to obviate the calling in of resident medical officers from other States.
>
> It is extremely difficult to convey in adequate terms a just appreciation of the work performed by the District Medical Committee. This Committee was of great assistance to the Principal Medical Officer in arriving at decisions as to what medical men should be called in for duty in camps and hospitals, recruiting centres, etc., and also arranging for the dispatch of medical officers abroad. The loyal acceptance by members of the profession generally of the decisions of the Committee, reflects the highest credit on that Committee and would indicate, moreover, the whole-heartedness and devotion of the profession in its duty to the State.
>
> Again thanking the medical profession for its unanimous support during the past four years,
>
> Yours faithfully,
>
> H. H. E. RUSSELL, Lieutenant-Colonel,
>
> Principal Medical Officer, 4th Military District.

The President introduced Dr. F. Truby King, of Dunedin, New Zealand, and asked him to address the meeting on the subject of child welfare.

Dr. Truby King apologized for taking up the time of the meeting that had been called for another purpose. He thought that some remarks on the subject of the welfare of women and children and on the measures that were being taken to bring about better treatment of infants might prove interesting. He explained that the reports of his remarks in the daily press were not quite correct. He was not advertising any particular food or addition to patent preparations. He was simply giving his opinion as to the value of certain substitutes for human milk in the feeding of babies. Many thousands of babies were being fed on tinned foods. He wished to indicate the way in which these foods could be altered so as to be of the greatest value when cow's milk could not be obtained. He dealt with the investigations at the Lister Institute and in America into the nature of the vitamines. In America preference was given to beet juice as a source of vitamines, while at the Lister Institute it was held that swede turnips yielded the best results. The heating of foods up to 87° C. did not damage vitamines. As protectives against rickets, butter fat and cod liver oil were of the greatest value. Lard was of little use. Some investigations by Wells had revealed that scurvy manifested itself in the tooth pulp in half the time required for the

signs to develope elsewhere. Food free from water-soluble vitamines produced destruction of tooth pulp in guinea pigs in twelve days, in monkeys in six weeks and in pregnant guiean pigs in ten days.

The speaker dealt with some of the changes that had taken place in Vienna in the children's hospitals, where the patients formerly lived in closed wards maintained at a temperature of 21° C.. The children now lived almost entirely in the open air all the year; there was a great improvement in the results. Dr. King maintained that the nearer they kept to the natural laws as to food and air, the better would be the health of the child. Breast feeding of infants was without doubt the best. Every effort should be made to provide this for infants. The health of the mothers should be the object of particular care and all possible measures should be employed to promote the flow of milk. It was better to supplement breast feeding than to put infants wholly on an artificial diet. He detailed experiments that had been conducted in connexion with infant feeding and explained some charts and diagrams.

Dr. H. S. Newland stated that the Branch was greatly indebted to Dr. Truby King for his address. He had raised questions of great importance. The experiments to which he had referred were very interesting.

Dr. H. Swift moved a vote of thanks to Dr. Truby King for his address. He said that the absence of rickets in Australia might be due to the habit of giving children fruit juice and pieces from the table. Breast feeding of infants should be utilized more freely. It would be of great benefit. He suggested that the proposals put forward might be adopted in connexion with the Queen's Home or the Children's Hospital. It was desirable that mothers should give more time to their children, although the tendency was to give less.

Sir Joseph Verco seconded the motion. He had been impressed by the assurance that the idea that women could not feed their children was more fancy than fact. It was frequently put forward that the milk was not sufficiently strong. This could be traced to the fact that it was the first milk and not the last that was usually drawn off for analysis. He agreed with Dr. Swift that women should be taught the importance of feeding their infants at the breast.

The vote of thanks was carried. Dr. Truby King thanked the members for their kind reception.

Thomas Les Cooney, Esq., M.B., 1919 (Univ. Sydney), of Ipswich, has been elected a member of the Queensland Branch.

The undermentioned have been nominated for election as members of the New South Wales Branch:—

Percy Neil Grieve, Esq., M.B., 1915 (Univ. Sydney), St. Andrews, Bellevue Road, Woollahra.

John William Smith, Esq., M.B., Ch.M., 1916 (Univ. Sydney), Tonbridge, 54 Walker's Avenue, Haberfield.

Malcolm Joseph Frizell, Esq., M.B., 1918 (Univ. Sydney), "Catfoss," Randwick.

Eric Burton Reed, Esq., M.B., Ch.M., 1919 (Univ. Sydney), Lewisham Hospital.

THE CONTROL OF MALARIAL INFECTION.

The Federal Quarantine Department has been entrusted with the work of supervision and control of the measures necessary to prevent the spread of malaria by returned soldiers who have been infected while on active service. The following letter is being addressed to all medical officers of the local Committees established under the Department of Repatriation. Appended to the letter is a memorandum on the treatment of malaria drawn up by Lieutenant-Colonel C. B. Blackburn, O.B.E.. In this memorandum is set out the routine method of treatment adopted in Egypt and Palestine.

Owing to the repatriation of considerable numbers of soldiers who have contracted malaria on active service and who may still be suffering at intervals from recurrent attacks of the disease, a definite danger exists that this disease may spread and become established in various parts of Australia.

Investigation has already established the fact that certain varieties of anopheline mosquitoes, which act as carriers of malaria in other parts of the world, have a widespread distribution in Australia and in many localities are very prevalent.

Should these mosquitoes in any locality get access to the infected human hosts and thus become themselves infected, the disease may readily become transmitted to other members of the community, and thus a definite local epidemic focus of the disease become established.

The danger is sufficiently great to necessitate a definite scheme of action throughout Australia to prevent the spread of the disease, and the Federal Quarantine Service has been entrusted with the responsibility of co-ordinating and controlling the measures necessary in this respect.

Since is appears probable that malarial parasites do not survive a winter in the mosquito host and that the perpetuation occurs in the human host alone, it follows that the primary effort must be directed towards the elimination of the parasite in the human host (to cure or render non-effective those members of the community who are suffering from primary or recurrent attacks of the disease) and in this way remove the foci from which the local mosquitoes can become infected.

To gain this end a definite course of action must be adopted so as to obtain a uniform effort throughout the Commonwealth towards the eradication of the disease; and your careful co-operation is desired in the following details:—

(1) *Notification.*—Immediate notification by Collect Wire to the Director of Quarantine, Melbourne, of each recurrent attack of malaria in ex-soldiers under your charge, as already arranged by the Department of Repatriation. Notification also to the Director of Quarantine, Melbourne, of any case coming under your care, in which the disease has become transmitted from the ex-soldier to any member of his household.

(2) *Treatment.*—A definite course of treatment, as shown in the attached memorandum, is laid down as indicating the minimum treatment which can be considered effective in ridding the blood of parasites and giving a reasonable chance of cure to the patient. This treatment should be given at the earliest possible moment in all cases of recurrence of the disease, as well as in primary attacks.

(3) *Mosquito Infection.*—In order to prevent the infection of local anopheline mosquitoes in localities where these are present, the careful screening of the patient by means of mosquito netting (at least 18 mesh to the inch) is necessary during the period of the attack and until the parasites disappear from the peripheral blood. Individuals subject to recurrent attacks of malaria should be advised to sleep always under a mosquito net during those months of the year when mosquitoes are present.

(4) *Preparation of Blood Films.*—Blood films are required in each case in order to insure correct diagnosis and to identify the variety of parasite. Both thick and thin films should be made.

Technique in making blood films:—

(*a*) It is of greatest importance that the glass slide should be perfectly free of grease. To insure this it should be cleaned with ether or chloroform immediately before the film is made.

(*b*) Prick lobe of ear or finger, after swabbing the skin with spirit. Take up two or three small drops of blood on the slide about ¼ inch from one end. Place the bottom of another clean slide immediately in front of the blood drops and then draw it backwards until the blood runs along the margin of contact. Push the upper slide slowly forward until the blood has spread in a film over the lower slide. Dry in the air without heating. For thin films the angle between the two slides should be 45° or less. For thick films the upper slide should be more nearly vertical.

Period of Attack at Which Film Should be Made.

Benign tertian and quartan fever: Shortly after the temperature reaches its highest point. Malignant (subtertian): Just before temperature rises, or (for crescents) during the apyrexial interval.

Films when prepared should be forwarded at once to the Chief Quarantine Officer at Brisbane, Sydney, Melbourne, Port Adelaide, Fremantle or Hobart, together with information regarding the nature of the attack (whether primary or recurrent) and the stage of the attack at which the film was made.

J. H. L. CUMPSTON,
Director of Quarantine.

Memorandum.

Directly an illness was diagnosed as an attack of malaria the patient was put to bed—for a week or ten days in a primary attack, for three or five days in a case of recurrence.

He was given a mercurial purge at once, followed by a saline in four hours and kept upon a liquid diet while the temperature remained raised. On each of the first three days an intramuscular or intravenous injection of quinine bi-hydrochloride dissolved in sterile saline was given. For intramuscular injection the dose was 1 grm in 15 c.cm. of saline and for intravenous injection 0.6 grm. in 15 c.cm. of saline solution.

From the first day of treatment an acid mixture containing 1 grm. of quinine sulphate in 15 c.cm. was given three times daily and continued for three weeks. After this 4 grm quinine sulphate was given each week for 60 days. As soon as the temperature became normal 0.2 c.cm. of *liquor arsenicalis* was given in mixture three times daily for 6 weeks.

My experience has led me to the conclusion that the giving of the 4 grm. of quinine sulphate each week after the first three weeks does not do more than mask the disease if the intensive treatment has not cured it and there is reason to suspect that it may help to develope a quinine resistant form of parasite.

I believe the best plan to adopt in chronic recurring cases is to give a three weeks' intensive course of treatment immediately a recurrence takes place and then to suspend the quinine altogether and simply to give arsenic and any other tonic treatment indicated by the patient's general condition.

I am of opinion that sooner or later, in practically every case, cure will result from one of these active courses of treatment, but consider that it is of the utmost importance to impress upon all patients that they must come for treatment directly attacks begin to reappear.

After a treatment on the above lines the patient usually remains very well for varying periods, often for weeks or months—rarely only a week or two—and then begins to have very slight attacks, perhaps a mild shiver and rise of temperature. If again treated at this stage, very little loss of weight or colour occurs and the prospect of eradicating the parasite is greatly enhanced. Usually the slight attacks are ignored and by the time a severe seizure takes place, the patient has lost weight, is anæmic and the parasites firmly re-established.

As regards the choice between intramuscular and intravenous injections and the technique:—

Intramuscular injections are more painful—abscesses occasionally result, but it is a safe method to adopt unless the medical officer is experienced in giving intravenous injections and has a very good needle and syringe.

Intravenous injections are best given into one of the larger veins at the bend of the elbow after impeding the venous flow with a light tourniquet. It is most convenient to use a 10 c.cm. syringe and great care must be taken to avoid injecting the solution into the subcutaneous tissues, as severe inflammation may result. Occasionally some phlebitis of the injected veins takes place. However, in very severe attacks, especially in the cerebral form of the disease, the intravenous route should always be followed and in such cases, it will often be necessary to give as many as three injections daily till the patient is well enough to take the quinine sulphate by mouth.

Similar increased frequency of dosage by intravenous and intramuscular methods will occasionally be necessary where, owing to persistent vomiting or for other reasons, the oral treatment cannot be adopted.

My experience has been that it is very rare to meet with abscesses after intramuscular injections, provided the injection is given very slowly—taking 5 minutes to inject 15 c.cm.—and making sure that the muscle is reached and provided, also, that the solution is sterile and not stronger than 0.06 grm. of quinine bi-hydrochloride in each cubic centimetre.

The sites of election for injection are the buttocks and the adductor muscles of the thighs. In the buttocks great care must be taken to avoid the line of the sciatic nerve and the most suitable spot is outside the line of this nerve in the muscle between the great trochanter and the iliac crest.

It is best to prepare the skin by first rubbing well with ether or spirit and then painting with tincture of iodine. Hot, moist applications over the site of injection during the ensuing 24 hours will greatly minimize the patient's discomfort.

In the *South Australian Government Gazette*, No. 2, of January 8, 1920, it is announced that the resignation of Arthur Lee Wilson Tackaberry as an Officer of Health under the *Health Act, 1898* (South Australia), had been accepted. Mr. Tackaberry is not a registered medical practitioner.

Although the *Health Act, 1919*, of Victoria will not come into operation until the regulations have been framed and gazetted, we undestand that some of the preliminary modifications introduced into the administration of health matters by the passage of the Act will be effected at a very early date. A Commission of Public Health will be appointed. This commission will consist of seven members, including the Chief Health Officer as Chairman, two medical practtiioners, a representative of the metropolitan municipalities and a representative of the extra-metropolitan municipalities. It is stated that the departmental officers under the old Act will be transferred automatically to their new positions under the new Act. The old Board of Health, which has been subjected to criticism for a considerable time on account of the limitation of its powers and the consequent lack of initiative, will cease to exist.

PUBLIC HEALTH WORK IN NEW SOUTH WALES.

(*Continued from Page 557 of "The Medical Journal of Australia" of December 27, 1919.*)

The Coast Hospital.

The Coast Hospital, Little Bay, has accommodation for 595 patients. There are 353 beds in the General Division, 238 in the Infectious Division (would it not be more logical to call this the Division for Infectious Diseases?) and four beds in the Nurses' Sick Room. During the course of the year, 4,320 patients were admitted to the Hospital. There were, in addition, 372 in the Hospital on the first day of the year. The number of deaths was 175 and of persons discharged 4.105. The death rate calculated according to the usual formula, was 4.1%. The average number of beds occupied was 433.12. The average residence of patients who were discharged was 36.49 days and the average cost per occupied bed was £94 10s. 9d.. The cost per occupied bed in 1916 was £74 10s. and in 1915 was £78 11s. 2½d.. The resident staff comprises 236 persons, including one Medical Supjerintendent, five Assistant Medical Officers, one Manager and five clerks, a dispenser, a Matron and 160 members of the nursing staff.

In the General Division the conditions dealt with did not differ in any important respect from those usually treated in general hospitals. A relatively large amount of major and minor surgery was performed. In the Infectious Division the total number of patients suffering from diphtheria was 1,259. This represents 48.8% of the total number of infections notified in the metropolitan area. None of the patients was under one year of age. Of the 457 patients under five years of age, 89 were under one and 97 were between one

and two years of age. The total number of patients under 15 years of age was 938, while of those over this age was 321. Antitoxin was used in 702 cases, while intubation was performed on eleven patients and tracheotomy on three. There were eleven deaths, which is equivalent to a case mortality of 0.86%. It is impossible to glean from the report whether this low mortality was due to the early admission of patients and the consequent early application of treatment, to the large doses of antitoxin given or to a low virulence of the infection. The third assumption does not appear to be justified, in view of the fact that the case mortality of the 2,578 infections in the metropolitan area was 3.65%.

There were 564 cases of scarlet fever dealt with. This represents slightly less than one-half of the cases notified. The total number of deaths was four, which is equivalent to a case mortality of 0.7. It may be assumed that the severest cases are dealt with in hospital, since the case mortality for the whole of the metropolitan area was practically the same as that of the hospital series. There were 122 cases of morbilli, with six deaths, which is equal to a 5% mortality. There were no deaths from parotitis among the 221 patients. There were 83 patients suffering from erysipelas and, of these, seven, or 8.4%, died. Only 33 patients were suffering from pertussis, but, of these, four died, which is equivalent to a case mortality of 12.1%. There were 21 patients with enteric fever and two deaths.

The David Berry Hospital.

The David Berry Hospital provides the residents of Berry and the surrounding district with accommodation for institutional treatment. The total number of patients admitted during the year was 185 and the average number of patients in the hospital at any given time was ten. There were ten deaths during the year. The mortality rate, calculated according to the usual formula, works out at 5.4% and not 5.25%, as mentioned in the report. Treatment was accorded for a variety of pathological conditions and 83 operations were performed.

Strickland Convalescent Hospital for Women.

This excellent institution, which has been in existence since 1914, contains ten rooms, each large enough for two or three patients. The surroundings and equipment are admirably adapted to the purpose of the institution. The majority of the patients are sent to convalesce from serious operations performed at the metropolitan hospitals. In other cases women and girls suffering from overwork and worry are given the benefit of a quiet rest in ideal surroundings. During the year 602 patients were admitted.

The Denistone Convalescent House for Men.

Denistone House fills a need analogous to that of the Strickland Convalescent Hospital. Male patients who have undergone treatment in metropolitan hospitals or, in a few cases, in the country hospitals and mining districts, are admitted for a short time in order that they may regain their lost strength. The average length of stay per patient was 28 days and the average number of patients in the home at one time was 18. During the year 267 men were admitted.

Leper Lazaret.

The Acting Medical Superintendent of the Coast Hospital publishes a separate report of the year's work in the Leper Lazaret. During the course of 1917 three persons were admitted. The first patient was a man, born in Germany, aged 56, who had lived in Sumatra and had been interned at Liverpool and elsewhere since April, 1915. A swelling on the dorsum of the left hand was first noticed in June, 1915. On admission, it was found that there were some infiltration near the right eyebrow, left malar eminence and in other situations on the head and face, a few scattered macules on the upper arm, some reddish brown, dry and scaly patches on the forearms and dorsa of both hands and scattered macules on the trunk, buttocks, thighs and legs. The ulnar nerves were enlarged. No leprosy bacilli were discovered.

The second patient was born in Hampshire, in England, in 1837. At the age of ten he arrived in Sydney. He was employed in various parts of New South Wales and Queensland, for some time, was assistant cook at the Leper Lazaret, Peel Island. Swelling of the hands and eyebrows and spots on the trunk were first noticed about the middle of 1916. On admission, it was found that there were many nodular infiltrations and annular macules in various parts of the body. Abundant leprosy bacilli were present in the smears.

The third patient, a woman, was a native of New South Wales, aged 54. She had lived the greater part of her life in the Lismore district. In 1912 she moved to the Casino district. The first symptoms were numbness and tingling in the left foot. At the end of 1915 the sensations were more marked and had spread to the right foot and leg. Six months later the hands became affected. In June, 1917, she suffered febrile attacks, accompanied by neuralgic pains. This was followed by the characteristic deformity of the hands and by the appearance of a discoloured and infiltrated area situated in the central part of the face. The macular lesions were typical and the ulnar nerves were greatly enlarged and were hypersensitive. It is not stated whether any bacilli were found.

There was one death in the Lazaret, of a person aged 64 years. The tissues examined after death showed lesions similar to those found in other cases of leprosy, but no bacilli were found in any of the sections.

During the course of the year three persons were discharged. The first was a Chinaman, in whom the disease was quiescent. He was deported to Hong Kong. In the two other patients there were no signs of active disease.

The Lazaret has been in existence since 1883 and from that date up to the end of 1917 145 persons have been admitted. Of the 66 whites, 40 were Australians. Of the 79 coloured patients, there were 52 Chinese and 17 natives of the Pacific Islands. Of these 145 lepers, 66 died, 16 were discharged (including one who absconded) and 39 were repatriated. There were 24 patients remaining in the institution at the end of the year. A progress report dealing with these patients is appended.

Lady Edeline Hospital for Babies.

The Lady Edeline Hospital for Babies at Vaucluse, bordering on the Sydney Harbour, contains 30 cots for infants and eight beds for their mothers. During the year 1917 the average number of cots occupied was 19. The number of babies admitted during the year was 241. Of these, 56 were under three months of age, 63 were under six months and 121 were under two years. There were 50 deaths, which is equivalent to a death-rate of 10.84%. The condition calling for treatment in the majority of the patients was gastro-enteritis. Grouping the cases of gastro-enteritis, enteritis, gastro-enteritis and nephritis, gastro-enteritis and pneumonia and gastro-enteritis, pneumonia and cellulitis together, there were 170 patiets, but of these 21 were still under treatment at the end of the year. Forty-two of these patients died. This represents a mortality of 28.19%. It appears that many of the patients are referred to the hospital from the baby clinics.

State Hospital and Asylum for Men, Liverpool.

The State Hospital and Asylum for Men at Liverpool is under the charge of a medical superintendent. During the year 1917 the position of junior medical officer was vacant. The honorary staff comprised a surgeon for ear and throat diseases and an ophthalmologist. During the year 1,415 persons were admitted to the institution, while 524 were in residence on the first day of the year. During the twelve months the number of those discharged was 1,232 and the number of deaths was 158. The death rate was consequently 11.2% and not 9.51%, as stated in the report. The average age of the persons who died was just over 65½ years. The average cost of maintenance per patient was £35 17s. 3d..

During the course of the year 1,066 patients were dealt with in the hospital wards, including 783 who were admitted during the 12 months. Of these, 656 were discharged and 157 died. The death rate, therefore, was 19.6%. Three patients were transferred to the Hospital for the Insane at Rydalmere. The number of surgical operations performed was 183, in addition to eight ophthalmic operations.

In the cancer division men suffering from inoperable malignant growths are admitted. There are 28 beds in this division. The treatment is necessarily palliative. On the first day of the year there were 33 patients in the division, while during the course of the 12 months, 72 new patients were admitted. The number of deaths was 54.

In the lock wards which have accommodation for 37 patients, active treatment is pursued. The majority of the patients were suffering from syphilis. In each case the complement deviation test is applied to the patient's serum. He is then given a series of intravenous injections of kharsivan and a series of intra-muscular injections of mercury. At the end of the course he is discharged and advised "as to the future." There is no information in the report concerning the number of injections given nor are we informed as to the method of control adopted after the completion of the course. There were 36 patients in the wards at the beginning of the year and 240 were admitted during the year. The number of primary and secondary syphilitic infections and of other forms of venereal disease is not given. The bacteriological tests are carried out at the Micro-Biological Department.

(To be Continued.)

Obituary.

ERNEST KNIGHT OVEREND.

Early in the year 1918 Ernest Knight Overend contracted influenza while in Melbourne on a visit. The attack was a severe one and he suffered from the results for many months. He returned to his home in Crow's Nest, in Queensland, and, as recorded in our issue of December 27, 1919, died from the effects of this prolonged illness on December 12, 1919.

He was born in Melbourne and was educated at the Brisbane Grammer School. In due course he matriculated at the University of Melbourne and studied medicine. He took his degree of bachelor of medicine in 1883. After graduation he settled in Brunswick and established himself firmly in practice. He was appointed Health Officer for the district. About the year 1900 his health failed and he was compelled to leave Victoria. He returned to Queensland and settled in Crow's Nest, where he practised for three years. At the end of this time he took a trip to Europe. On his return to went to Charleville and again worked up a sound practice. His ill health followed him doggedly and in 1915 he was again compelled to seek a change of environment. For close on three years he worked under adverse circumstances at Beenleigh in Queensland. Then came his attack of influenza, which appeared to add a load he was unable to bear. Throughout the prolonged period of ill health, he remained bright, witty and entertaining. His patients valued his services as medical adviser very highly. They found him at all times ready and anxious to help them in a skilful and sympathetic manner. He leaves a widow and one daughter. Mrs. Overend has received ample evidence of the high regard in which he was held by both patients and friends in Victoria and Queensland. One writing from Melbourne refers to his unselfish qualities and states that many poor and desolate men and women mourn his loss and treasure the memory of him. The sympathy of the medical profession has been extended to Mrs. Overend in her bereavement.

Correspondence.

TONSILLECTOMY.

Sir,—The operation of tonsillectomy seems to be about the most fashionable operation at the present time in this city. It is undertaken on the slightest provocation and too often without any evidence whatever of a pathological condition existing. Whether the tonsil in adult life is of use or not should not influence one in deciding to operate. The main question is: is the tonsil in a pathological state? (and there should be no difficulty in the majority of cases in deciding that). If so, then its removal is justified and, in many cases, demanded.

Disappointing results are sure to follow when patients have a tonsillectomy done on a healthy tonsil, because of some constitutional disease, *e.g.*, arthritis, lumbago, sciatica, gastritis, etc., and even endometritis.

The operation is not one devoid of danger and one frequently meets with serious hæmorrhage, both early and late. Suburban practitioners rightly do not relish the habit of being called at night to control hæmorrhage after tonsillectomy when such cases have been operated on by city men. I do not regard the operation as a trivial one, but one of some danger and only to be undertaken when the tonsils are in a pathological condition and never in a non-pathological condition.

Yours, etc.,
JAMES M. BAXTER, M.D.,
Oculist and Aurist, St. Vincent's Hospital.

Melbourne,
December 22, 1919.

THE TRANSVERSE LIGAMENTS OF THE CERVIX.

Sir,—Several writers, both in England and Australia, have recently referred to these structures as Mackenrodt's ligaments. In doing so they are giving him an honour to which he is not strictly entitled, as the following brief statement will show. Mackenrodt described these ligaments as "bands of firm fibrous tissue, which form specialized parts of the pelvic fascia; arising in the neighbourhood of the ischial spines, they pass through the pelvic cellular tissue and are attached to the sides of the cervix and vaginal vault."

It will at once be seen that Mackenrodt entirely overlooked the essential factor in the anatomy of these ligaments and upon which their main function depends, namely, that they are packed with bundles of smooth, muscular fibre, arising from the uterine neck and passing out laterally towards the pelvic brim.

It is now admitted by leading authorities that the ligaments thus described, and not the hypothetical structures evolved by Mackenrodt, are the chief supports of the uterus, holding it at a more or less definite level in the pelvis, and hence they are most fittingly defined as "the cardinal ligaments of the uterus."

Yours, etc.,
FRANK L. NYULASY, M.D., B.S. (Melb.).

Melbourne, January 7, 1920.

Proceedings of the Australian Medical Boards.

SOUTH AUSTRALIA.

The undermentioned have registered under the provisions of the *Medical Act, 1880,* as duly qualified medical practitioners:—

Bennett, Norman Robertson, M.B., B.S., Adelaide, 1919.
Broadbent, Harold Walter, M.B., B.S., Adelaide, 1919.
Glynn, Robert McMahon, M.B., B.S., Adelaide, 1919.
Gault, Estelle Ruth, B.Sc., M.B., B.S., Adelaide, 1919.
Hecker, Stewart Roy, M.B., B.S., Adelaide, 1919.
Pryor, William Arthur, M.B., B.S., Adelaide, 1919.
Pavy, Harold Keith, M.B., B.S., Adelaide, 1919.
Russel, Alfred Burgess, M.B., B.S., Adelaide, 1919.
Reiger, Clarence Oscar F., M.B., B.S., Adelaide, 1919.
Richards, Clarence, B.Sc., M.B., B.S., Adelaide, 1919.
Steele, Donald McDonald, M.B., B.S., Adelaide, 1919.
Shanasy, William Bonwill, M.B., B.S., Adelaide, 1919.
Streich, Carl Ivo, M.B., B.S., Adelaide, 1919.
Schafer, Carl Hannaford, M.B., B.S., Adelaide, 1919.
James, William Robert Wallace, L.R.C.P. and S., Edin., L.F.P. and S., Glas., 1891.

Books Received.

A DICTIONARY OF TREATMENT, INCLUDING MEDICAL AND SURGICAL THERAPEUTICS, by Sir William Whitla, M.A., M.D., LL.D., M.P., Sixth Edition; 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 1083. Price, 25s. net.

MANUAL OF TROPICAL MEDICINE, by Aldo Castellani, C.M.G., M.D., M.R.C.P., and Albert J. Chalmers, M.D., F.R.C.S., D.P.H., Third Edition; 1919. London: Baillière, Tindall & Cox; Demy 8vo., pp. 2436, with 16 coloured plates and 909 illustrations in the text. Price, 45s. net.

SEVEN SPIRITUAL SONGS (OF SHAKESPEARE'S TIME), inscribed to Sir William Osler, M.D., Regius Professor of Medicine in the University of Oxford, words and music by Thomas Campion, M.D.; 1567-1620. Adapted and arranged for use in churches and choral societies at the present time; 1919. Cambridge, at the University Press. Words and music, 2s. 6d. net; for choirs (20 copies), £1 net.

LEÇONS DE PATHOLOGIE DIGESTIVE (Quatrième Série), par M. Loeper; 1919. Paris: Masson et Cie; Royal 8vo., pp. 298. Price, 11 francs net.

Medical Appointments.

The following medical practitioners have been appointed certifying surgeons for the purposes of the *Workmen's Compensation Act, 1916* (New South Wales), for the several districts:—

Dr. R. G. Alcorn (B.M.A.) for East Maitland.
Dr. A. S. Bowman (B.M.A.) for Singleton.
Dr. B. Middleton (B.M.A.) for Murrurundi.
Dr. F. H. May (B.M.A.) for Gunnedah.
Dr. A. Hutley (B.M.A.) for Lithgow.

The appointment of Dr. E. L. Morgan (B.M.A.) as Junior Assistant Microbiologist in the Department of Public Health of New South Wales has been confirmed. Dr. Morgan has held this position provisionally during the prescribed period.

Dr. H. W. F. Mitchell (B.M.A.) has been appointed Officer of Health for the Shire of Morwell, Victoria.

Dr. F. E. Clay (B.M.A.) has been appointed District Medical Officer at Quairading, Western Australia.

Dr. J. C. Shelmerdine (B.M.A.) has been appointed District Medical Officer at Westonia, Western Australia and Visiting Medical Officer at Southern Cross.

The resignation of Dr. W. T. Hodge (B.M.A.) of his appointment as District Medical Officer and Public Vaccinator at Moora, Western Australia, has been announced.

Dr. E. P. Thurstan has been appointed Acting Medical Officer of Health for the Menzies Road, Board, under the provisions of the *Health Act, 1911-1918* (Western Australia).

Dr. H. A. Faulkner (B.M.A.) has been appointed a member of the Council of the Mount Gambier Technical School, South Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxi.

The Queensland Hookworm Campaign: Medical Officer.

Technical Commission of Inquiry, New South Wales Board of Trade: Physician, Bacteriologist and Medical Officer.

First-Aid and Dispensing Hospital, Alpha, Queensland: Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital. Chillagoe Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society..
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Jan. 20.—Tas. Branch, B.M.A., Branch and Council.
Jan. 20.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Jan. 22.—Q. Branch, B.M.A., Council.
Jan. 28.—Tas. Branch, B.M.A., Branch and Council.
Jan. 28.—Vic. Branch, B.M.A., Council.
Jan. 28.—Northern District Med. Assoc. (N.S.W.), Annual General Meeting, Glen Innes.
Jan. 29.—S. Aust. Branch, B.M.A..
Jan. 29.—Central Western Med. Assoc. (N.S.W.), 8.30 p.m., at the Woolpack Hotel, Parramatta.
Feb. 4.—Federal Committee of the B.M.A. in Australia (Sydney).
Feb. 4.—Vic. Branch, B.M.A.; presentation of Balance Sheet for 1919.
Feb. 6.—Q. Branch, B.M.A..
Feb. 11.—Tas. Branch, B.M.A., Annual Meeting.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: City 2645.)